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Assessing Emotional Evaluation: A Validation Study of the Reactions to Emotions Questionnaire

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Assessing Emotional Evaluation: A Validation Study of the Reactions to Emotions Questionnaire

by

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Dedication

To Mom, Dad, and Darcy, who each contributed significant pieces of support and encouragement during this whole process of elementary school, middle school, high school, undergraduate, and graduate school which have been invaluable in helping me to (finally!) finish my formal education as smoothly as possible. Love to you all!

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Assessing Emotional Evaluation: A Validation Study of the Reactions to Emotions Questionnaire

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This study describes the development and validation of the Reactions to Emotions Questionnaire (REQ), a measure that assesses individuals' evaluation of themselves when experiencing various core emotions. A primary aim of the current study was to explore the predictive validity of the REQ; specifically, whether scores on the measure predict recovery time following a distressing event. Participants engaged in a negative mood induction to induce a sense of disappointment or failure. Emotional arousal was assessed with physiological measurements and self-report of mood. Cognitive arousal was measured with a task that compared time to recognize words related to the negative mood induction with time to recognize neutral words. It was hypothesized that individuals who have a relatively accepting stance towards their emotions (as measured by the REQ) will have a quicker return to baseline levels of emotional arousal and will be less cognitively

primed following the negative mood induction than individuals who have a more judgmental stance towards their emotions.

Analyses indicated that emotional evaluation was not a significant predictor of emotional or cognitive arousal following the negative mood induction. The level of arousal between individuals with either accepting or judgmental emotional evaluations did not differ following the failure manipulation.

A separate hypothesis addressed the REQ's construct validity by predicting that scores on the REQ subscales would be moderately correlated with scores on questionnaires assessing ideas related to emotional evaluation. This hypothesis was supported, as the REQ was moderately correlated with measures of constructs such as self-esteem, acceptance of emotional experiences, and emotional expression. It was negatively correlated with measures of guilt, rumination, and suppression of emotions.

A secondary focus of the study was the relationship between emotional evaluation, emotion expression, and attachment style. Attachment theory is one conceptualization of the etiology of emotional evaluation and emotion expression style, and a proposed model depicting the relationship between these three constructs is described. First-order correlations and a canonical correlation analysis were conducted between the attachment styles outlined by Bartholomew (1994), tendency to inhibit emotions, and the subscales of the REQ. Results suggested that attachment theory is a useful marker of emotion regulation and emotional evaluation tendencies.

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CHAPTER ONE

Introduction

There is a need in the current literature for a valid, reliable measure that addresses subjective emotional reactions to specific emotional experiences. While there are questionnaires that assess responses to emotions in an objective or a general sense, none investigate specifically the degree to which individuals evaluate themselves positively or negatively when they experience certain emotions. In an attempt to fill this gap, the Reactions to Emotions Questionnaire (REQ) has been developed. The REQ assesses how individuals feel about themselves when experiencing various core emotions. Internal consistency and test-retest reliability and convergent and discriminant validity have been collected and will be presented, along with factor analysis results. The purpose of the current study is to provide further validation information for the REQ. A primary set of hypotheses will address the REQ's predictive validity by investigating its ability to predict recovery from a distressing event. In addition, a second set of hypotheses will address the REQ's construct validity by examining the relationship between acceptance of emotions, emotion inhibition, and attachment style.

There are many different ways to react to an emotion. Some individuals tend to become upset, frustrated, or self-critical over an emotional experience, while others are inclined to be accepting of and open to their emotion. Such individuals might simply experience the primary emotion without the additional layer of judgment. Preliminary evidence suggests that the manner in which an individual evaluates his or her emotions has a bearing on the subsequent levels of psychological distress, with a more positive,

accepting evaluation leading to less distress (Papageorgiou & Wells, 2001; Wells & Carter, 2001).

There is a growing interest in reactions to emotions, especially regarding the role of emotional acceptance in mental health. Emotional acceptance is an ingredient in clinical interventions such as dialectical behavior therapy (Linehan, 1987), acceptance and commitment therapy (Hayes, Strosahl, & Wilson, 1999), and mindfulness-based interventions (Kabat-Zinn, 1994; Kabat-Zinn et al, 1992; Teasdale, Segal, & Williams, 1995).

One potential conceptualization of how emotional evaluations influence health outcomes involves their relationship to emotional processing. Negative emotional evaluations are thought to impede effective emotional processing, while positive evaluations are expected to produce smoother and more effective processing. Viewing emotions through a negative or ambivalent lens could exacerbate individuals' level of distress, creating a downward spiral of angst and not allowing people to have the emotional space necessary to "think through" and process their emotions. For example, individuals with Generalized Anxiety Disorder often believe that worry is dangerous and uncontrollable, yet necessary as a coping mechanism (Wells & Carter, 2001). Presumably, their ambivalent ideas about worry play a role in the development of their anxiety disorder by increasing their distress and not giving them the mental freedom to explore and process their anxiety. An accepting, non-judgmental emotional evaluation, on the other hand, might allow individuals to move through distress more efficiently because the blockages created by increased negative emotions may not occur.

The current study evaluates the REQ's predictive validity by assessing its ability to predict physiological, emotional, and cognitive responses to negative feedback. Participants will engage in a frustrating problem-solving task and will be given unfavorable feedback while their physiological arousal and self-reported mood is measured. It is hypothesized that individuals with non-accepting attitudes towards their emotions will exhibit a slower return to emotional and physiological baseline following the negative mood induction and will ruminate more following the stressful experience. Furthermore, it is hypothesized that attachment style as conceptualized by the view of the self and other will predict emotion inhibition and emotional evaluation styles.

The validation of the REQ can fill an important gap in emotion regulation research by facilitating the reliable and valid assessment of reactions to emotional experiences. The current study is an important step in the validation of the REQ because it will examine the relationship between the REQ and several self-report and non-self-report indices of emotional processes. Physiological arousal and rumination (cognitive priming of distressing thoughts) will be measured directly as opposed to being assessed by self-report. The current study will also investigate the duration of emotional arousal in response to a simulated failure experience. The REQ would be valuable in clinical settings by identifying individuals who are prone to struggle with depression, anxiety, or other emotion-related disorders. The questionnaire also has empirical importance by providing a way to investigate emotional acceptance in a more standardized and therefore more reliable manner.

CHAPTER TWO

Literature Review

Responses or reactions to emotional experiences have recently garnered interest in the empirical and clinical fields of psychology. Thoughts or emotions might occur in response to an initial emotional experience, such as feeling depressed about feeling sad or anxious about feeling panicked. As interest in emotional reactions grows, however, so does the need for a valid and reliable way to measure individuals' emotional responses to emotional experiences. The current study introduces the Reactions to Emotions Questionnaire (see Appendix A), which addresses how individuals feel about themselves when experiencing various core emotions, such as sadness, pride, and anger. The effect of reactions to emotions has been a focus in discussions of mindfulness and self-compassion and is incorporated into clinical interventions such as dialectical behavior therapy and acceptance and commitment therapy. A tenet of many such clinical programs is that the *nature* of reactions to emotions can impact subsequent levels of distress. In other words, the degree to which a reaction is accepting, neutral, or judgmental can influence the impact of the reaction. For example, responding to depressive feelings with an attitude of "this is normal, it's acceptable to have this reaction right now" might lead to less distress than an attitude of "I shouldn't feel this way, most people don't have feelings like this." What might lead individuals to react to the same emotion in such contrasting manners? Investigating the etiology and function of emotional judgments has empirical and theoretical relevance to help clarify the role of emotional reactions in mental health.

In the following literature review the empirical roots of emotional evaluation will be discussed, including research on the impact of emotional judgment and the growth of constructs such as mindfulness and meta-emotions. Clinical applications involving acceptance of emotions will also be described, followed by a discussion for the rationale of the development of the REQ. The development of the questionnaire will be described as will the initial validity and reliability data and a factor analysis of previously collected scores. The literature on attachment style as it relates to emotion regulation and evaluation will be presented, along with a theoretical relationship between attachment style, emotion inhibition, and emotional evaluation.

Judgment of Emotions

Reactions to emotions can often reflect a judgment or negative evaluation. For example, an individual might experience sadness and accept that experience as common and natural. On the other hand, sad feelings might cause a person to feel poorly about him or herself and think that something is "wrong" with him or her. This view of sadness in either an accepting or a non-accepting manner might reflect an underlying belief about the "normalcy" or "appropriateness" of sadness, allowing the secondary emotion or thought to be in part a judgment of the initial emotional experience. This pattern described for sadness might apply to any number of emotions, with reaction to the emotional experience including a judgment or evaluation of the emotion.

Meta-Cognitions, Meta-Emotions, and Emotional Evaluation

Several researchers have explored the idea of reactions to emotions empirically. Preliminary evidence suggests that the manner in which an individual views and

evaluates his or her emotions influences mental health outcomes. Wells and Carter (1999, 2001) have used the term "type two emotions" to refer to feelings that arise in response to various emotions. Their research focuses on the emotional experience of worry, and they define "type two worry," or "meta-worry," as the "negative appraisal of worrying itself." Examples of such appraisals might include "Worrying could lead to a mental breakdown" or "My worry might cause bodily damage." Study results suggest that type two worry as measured by the Anxious Thoughts Inventory (Wells, 1994), which assesses meta-worry, is linked with pathological or problematic worry as measured by the Penn-State Worry Questionnaire (Meyer, Miller, Metzger & Borkovec, 1990), which assesses chronic and excessive worry (Wells & Carter, 1999). Wells and Carter (2001) asked individuals with Generalized Anxiety Disorder (GAD) to complete a questionnaire assessing general tendency to worry as well as positive and negative meta-cognitions about worry. An example of a positive meta-cognition might be "worrying can help me cope with a threat," while a negative meta-cognition might be "my worry can become uncontrollable." The results suggested that individuals with GAD are more likely than unafflicted individuals to report that worry is uncontrollable and dangerous. At the same time, these individuals also view worrying as a coping strategy. Presumably, holding these ambivalent thoughts about worry can result in a self-conflicting cycle, where worry is both necessary and undesirable at the same time.

Papageorgiou and Wells (1999) have also investigated metacognitions. Their research suggests that positive and negative beliefs about rumination may be to depression what positive and negative beliefs about worry are to GAD, indicating that

metacognitions play a role in the development of both conditions (Papageorgiou & Wells, 1999). They researched GAD and depression through the use of thought diaries to evaluate private or personal emotional expression. Over a two-week period, participants recorded depressive and anxious thoughts, and they also recorded answers to questions assessing various reactions to the thoughts such as meta-worry, or "worry about the thought," controllability of the thought, believability of the thought, and dismissability of the thought. An example of a question to assess thought believability is "How much did you believe the thought?" Study results suggested that anxiety intensity was associated with meta-worry. The more participants reported worrying about their anxious thoughts, the more intense their anxious thoughts tended to be. These results are consistent with the idea that meta-cognition is involved in psychological disorder (Papageorgiou & Wells, 1999).

Research on metacognitions also suggests that the judgment or evaluation of rumination plays a role in the development of depression. Papageorgiou and Wells (2001) assert that individuals with recurrent major depressive disorder hold both positive and negative beliefs about rumination. They addressed this notion in a study of beliefs about rumination held by individuals with major depression. Beliefs about rumination were provided verbally to an examiner in response to probe questions such as "what are the disadvantages of ruminating?" An example of a positive belief about rumination is "If I didn't ruminate about my feelings, I wouldn't be able to control them," and a negative belief about rumination is "Only weak people ruminate." The authors suggest that positive beliefs about rumination are associated with the use of rumination as a

coping strategy to regulate mood. On the other hand, negative beliefs about rumination are associated with a sense of hopelessness when ruminating (Papageorgiou & Wells, 2001). Therefore, if individuals with positive beliefs about rumination experience depressive feelings, rumination can serve as a coping mechanism to help stabilize their mood. This same regulatory function might not occur in individuals with negative beliefs about rumination, as for those individuals rumination might instill a sense of hopelessness which could undermine rumination's potential coping strategy (Papageourgiou & Wells, 2001). Therefore, the degree to which depressed individuals appraise their rumination in either a positive or negative light can impact the course of their depression, supporting the notion that judgment or evaluation of emotions influences mental health.

Rude, Little, and Neff (in press) highlight the role of emotional evaluation in rumination. They developed a parallel version of Nolen-Hoeksema's Ruminative Response Scale (RRS; 1991) which attempted to remove self-judgment from the wording of the items. For example, Rude et al altered the original item "Think, 'Why do I always react this way?'" to "Feel curious about my tendency to be upset like this." The authors assert that the revised item exhibits a less judgmental tone than the original. The revised RRS items were less highly correlated with questionnaires assessing thought suppression and depression than were the original items. The authors interpreted this finding as suggesting there is a judgmental aspect to rumination which differentiates between harmful and beneficial modes of attending to emotion. Presumably, an individual might

contemplate past events in either a self-critical or a benignly curious manner, reflecting an evaluative process that influences future levels of distress.

Watkins (2003) investigated the role of evaluation of intrusive thoughts on tendency to ruminate and worry. Participants completed questionnaires addressing tendency to worry and ruminate, as well as a questionnaire that asked them to rate appraisals and strategies used in response to intrusive thoughts. Particular appraisals of intrusive thoughts were associated with increased tendency to worry and ruminate (Watkins, 2003). For example, increased disapproval of intrusive thoughts and reprimanding oneself as well as the disapproval-dismissal factor of rumination were correlated with both worry and rumination, highlighting the role that evaluations play in predicting ruminative and worry behavior.

Researchers discussing the role of a negative emotional reaction suggest it is linked with psychological distress, supporting the idea that the judgment of emotions plays a role in mental health outcomes. Lynch, Robins, Mores, and Krause (2001) have used the term "secondary emotions" to refer to the emotions such as shame that can follow an emotional experience. The authors assert that the presence of this negative secondary emotional experience may be an indicator that inhibiting the private experience of emotion is exacerbating distress as opposed to being useful.

There has also been preliminary evidence suggesting that emotional evaluation has utility in predicting subsequent well-being. Wells and Carter (1999) showed that type two worry was a stronger predictor of pathological worry (as measured by the Penn-State Worry Questionnaire, which assesses proneness to chronic, excessive, and general worry)

than type one worry, thoughts about the uncontrollability of worry, and anxiety level. In addition, Nassif (1999) found that in a non-clinical sample, meta-cognitions regarding the negative aspects of worry, such as its uncontrollability and danger, predicted the development of GAD 12 to 15 weeks later.

Clinical Applications of Emotional Acceptance

Dialectical behavior therapy.

The notion of emotional evaluation is becoming increasingly present in clinical applications with the effect of reactions to emotions being incorporated into symptom conceptualization and treatment. For example, Linehan's (1987) dialectical behavior therapy (DBT) discusses the idea of "radical acceptance." This practice is described as "focusing on the current moment, seeing reality as it is without 'delusions,' and accepting reality without judgment" (Robins, Schmidt, & Linehan, 2004). Radical acceptance is a "total act" in that individuals do not choose parts of reality to accept or reject, but instead engage in a liberating stance of moment-by-moment acceptance (Robins, Schmidt, & Linehan, 2004). This accepting approach is thought to decrease the tendency to cling to the unalterable past which allows for change, and can prevent becoming mired in an emotional experience (Robins, Schmidt, & Linehan, 2004).

Acceptance of emotional experiences is theorized to be a key component of change in DBT when used to treat borderline personality disorder (BPD). A central tenet of DBT is that dysfunction in individuals with BPD is a result of high emotional vulnerability and difficulty regulating affect (McMain, Korman, & Dimett, 2001). Linehan (1993) asserts that emotional dysregulation in individuals with BPD is due to

biological irregularities coupled with an "invalidating environment," with the latter construct being defined as an environment that trivializes, ignores, or dismisses the expression of a child's internal experiences. The result of this combination is individuals who learn that their interpretations of their experiences are wrong, who lack the ability to label, regulate, and tolerate emotions, and who look to the environment for cues on how to handle emotional stimuli (McMain, Korman, & Dimett, 2001). DBT's promotion of acceptance of emotional experiences provides the previously absent validation of emotional experiences. This validation allows individuals with BPD to tolerate emotions and learn to correctly identify their emotions, which are important components of adaptive emotion regulation (McMain, Korman, & Dimett, 2001).

Preliminary evidence suggests that DBT is effective in treating individuals with BPD (Linehan, 2000; van den Bosch, Verheul, & Schippers, 2002; Westen, 2000). DBT appears to help decrease emotional dysregulation, as measured by frequency of anger outbursts, and improve communication skills in individuals with BPD (McMain, Korman, & Dimeff, 2001). The research also suggests that DBT is helpful for more specific BPD populations, such as individuals with BPD and a comorbid eating disorder (Palmer, Birchall, Damani, Gatward, McGrain, & Parker, 2003), hospitalized males reporting borderline traits who are struggling with anger and hostility (Evershed, Tennant, & Boomer, 2003), adolescents with BPD reporting suicidal ideation and psychiatric symptoms (Rathus & Miller, 2002), and women with BPD and comorbid drug dependence (Linehan, Schmidt, Dimeff, Craft, Kanter, & Comtois, 1999).

Acceptance and commitment therapy.

Similar to DBT, a core component of Acceptance and Commitment Therapy (ACT) is "a conscious posture of openness and acceptance toward psychological events, even if they are formally 'negative,' 'irrational,' or even 'psychotic'" (Hayes, 2004). Hayes suggests that even though thoughts and beliefs develop in limited and perhaps misleading contexts, they can be granted a good deal of power or "truth." He asserts that openly and non-judgmentally observing a "negative thought" may thwart the maladaptive function that can arise when the thought is treated as "truth" (Hayes, 2004). ACT claims that accepting all emotions will decrease the negative functions that can accompany suppressing or resisting an emotional experience.

Hayes (2004) theorizes that psychopathology is a result of "psychological inflexibility." He states that there exists a small set of "relational frameworks" that are utilized to make comparisons and to discuss events. For example, an individual might think "If I do a certain action I will achieve a certain result, which will be good," and this thought process may be adaptive in many circumstances. This one "relational frame," however, might not be applicable to all situations, and Hayes asserts that individuals experience psychological difficulties when attempting to apply too small a repertoire of relational frames to all experiences (2004). He suggests that ACT produces "psychological flexibility" which can bring language processes (such as the "if ... then" example discussed above) into a contextual framework to decrease their problematic nature. ACT utilizes interventions such as acceptance and "contacting the present moment" to develop increasingly larger flexibility in language application and use,

thereby decreasing the inflexibility that is thought to be linked to psychological distress (Hayes, 2004).

Empirical evidence involving ACT has suggested that incorporating an open and accepting stance to emotions and experiences is linked to mental well-being. For example, hospitalized individuals with psychotic symptoms who received ACT as a part of their treatment were half as likely to be rehospitalized compared to individuals who did not receive ACT (Bach & Hayes, 2002). Furthermore, the individuals who engaged in ACT reported a lower tendency to believe that their delusions or hallucinations reflected reality (Bach & Hayes, 2002). ACT was also suggested to be useful in a non-clinical population, as it was related to improved scores on measures of general mental health, depression, and propensity to motivate in a study addressing work-related stress (Bond & Bunce, 2000).

Mindfulness meditation.

Mindfulness meditation is another important clinical application with a focus on openness and acceptance. Mindfulness meditation promotes a focus on the present moment with an accepting, non-judgmental attitude, without the emotional response we often experience as a reaction to our current reality (Kabat-Zinn, 1994). Baer (2003) asserts that while in a state of mindfulness, thoughts, sensations, or emotions are to be noted with self-compassion, not judged as good or bad, but merely observed. In fact, mindfulness is one aspect of self-compassion, a practice that emphasizes being open to all emotions instead of attempting to disconnect from or ignore our emotional experiences (Neff, 2003b).

This emphasis on being open to experiences is thought to lead to beneficial restructuring of reality for individuals who are "stuck" in their current way of being (DelMonte, 1987). Observing emotions through a detached, non-judgmental lens might help individuals see previously undisclosed patterns in their thought processes or behaviors that are hindering them in some way, as well as provide them the freedom to see more healthy or helpful alternatives. Baer (2003) notes that a mindful stance can lead to improved self-observation, which can thereby increase one's range of available coping skills. Furthermore, mindfulness training may increase the ability to recognize problems at their outset, allowing individuals to apply learned coping skills at a time when they might be most effective (Baer, 2003).

Several researchers have applied the ideas of mindfulness meditation in a clinical setting, with promising results. For example, application of a 10-week long stress reduction and relaxation program (SR&RP) which incorporates a mindful awareness has yielded significant group improvements in physical, emotional, and psychological symptomology, including physical pain, somatization, anxiety, depression, and self-esteem (Kabat-Zinn, Lipworth, & Burney, 1985). An aspect of the SR&RP found especially salient by the participants in this study is the idea that thoughts are just thoughts, and do not necessarily reflect truth or reality. This idea alone was helpful in reducing anxiety and in being able to handle anxiety-provoking situations more effectively. This outcome highlights the power of an aware, open approach to our experiences (Kabat-Zinn, et al, 1992). Mindfulness training has been shown to decrease the salience of environmental triggers to prevent substance abuse relapse (Breslin, Zack,

& McMain, 2002), aid in learning new coping strategies, (Turk, Meichenbaum, & Berman, 1979), and alleviate depressive symptoms (Ma & Teasdale, 2004; Teasdale, Segal, & Williams, 1995; Teasdale et al., 2000). With an open, non-judgmental focus on emotional experiences being a key factor of mindfulness meditation, these studies support the idea that emotional evaluation is a valuable and important construct with empirical and clinical relevance.

The literature on mindfulness suggests that a positive emotional evaluation is an important aspect of a mindful, open emotional awareness. If an individual views his or her emotions unfavorably, it presumably would be difficult to be open, curious, or unassuming about emotional experiences. Being emotionally open and curious necessarily incorporates a non-judgmental attitude, because if individuals view emotions in a negative light, they may much more readily become closed off towards and un-accepting of their emotional experiences.

It is important to note that clinical applications such as dialectical behavior therapy, acceptance and commitment therapy, and mindfulness meditation do not promote emotional acceptance in isolation. Each of these interventions incorporates emotional acceptance and openness in addition to other practices such as daily meditation or weekly skills training. Therefore, researchers cannot be certain that being open to and accepting of emotional experiences is responsible for the promising empirical and anecdotal outcomes attributed to these interventions. However, the fact that acceptance is a common factor among these and other beneficial approaches suggests that emotional

acceptance is an important clinical factor that warrants further research and hopefully further understanding and utility.

Attachment Relationships as Possible Etiology of Response to Emotion

The research on mindfulness, secondary emotions, and metacognitions that serves as the backdrop for the development of the REQ suggests that emotional evaluation style impacts subsequent mental health, with an accepting stance towards one's emotions being linked with positive outcomes. This assertion, however, begs the question of what leads to the development of a given emotional evaluation style. In other words, why do some people develop relatively accepting emotional reactions while others are more ambivalent or even judgmental towards their emotions? A secondary focus of the current study is to address this question by investigating the intersection between attachment theory, emotional evaluation, and emotion inhibition.

Attachment theory is a potentially important influence on the development of either an accepting or a non-accepting emotional evaluation style. Attachment style can be conceptualized as representing internalized views of both the self and others, and the current study introduces a theory that uses the self and other views to predict patterns of both emotional acceptance and emotional expressiveness. Presumably, the messages learned about the self and others from early caregivers could impact how people interpret and react to their emotional experiences.

Attachment theory addresses the quality of early caregiver relationships and how those relationships influence the development of the child (Bowlby, 1973). According to Bowlby's theory, the relationships with early caregivers are internalized by the child and

form the prototype for all relationships later in life. The accessibility of the caregiver as well as the manner in which the caregiver responds to needs informs the child of his or her worthiness of being cared for and loved. Bowlby described these internalizations as cognitive working models of attachment which refer to both the caregiver and the self (1973) and represent an attachment schema of the self and other. Cognitive working models are internalized schemas about whether the caregiver is a person likely to respond in a supportive, protecting manner and also about whether the self is a person who is likely to elicit a helpful response from others, particularly the caregiver. A child's attachment experiences are thought to be the base for his or her adult attachment experiences. An individual's early experiences may lead him or her to seek out confirming attachment experiences as an adult in an effort to avoid the anxiety that arises with a novel or unexpected attachment experience. Childhood attachment is not thought to remain unchanged into adulthood, however, but instead can change and develop over time.

Since childhood attachment is thought to be the foundation of adult attachment, several adult attachment categories have been identified based on the characteristics of early caregiver relationships. Bartholomew and Horowitz (1991) describe a four-category model of attachment based on the cognitive working models of the self and other conceptualized by Bowlby (1973). Previous researchers (Ainsworth, Blehar, Waters & Wall, 1978) identified the secure, anxious-ambivalent, and avoidant categories of adult attachment, but as researchers investigated these categories as they apply to adult relationships, the avoidant category was encompassing two patterns of behavior.

Bartholomew (1990) separated the avoidant category into two distinct categories to reflect the two differing behavior patterns, resulting in a total of four categories, titled secure, preoccupied, dismissing, and fearful. It is important to note, however, that not all individuals fall cleanly into one category; often people reflect characteristics of more than one style (Bartholomew, 1990).

The categories of attachment style are often conceptualized by the schemas each has of the self and others. Each category views the self and other in either a positive or negative light which in turn influences the individual's self-esteem and interpersonal functioning. For example, a secure individual is described as having a positive view of self and other. These individuals have a sense of worthiness or lovability as well as an expectation that others are supportive and responsive (Bartholomew & Horowitz, 1991). Dismissing individuals have a positive view of self and a negative view of others, resulting in an avoidance of close relationships and maintenance of autonomy and independence. Preoccupied individuals have a negative view of self and a positive view of others. This style leads to self-blame for perceived rejection by others, which allows preoccupied individuals to maintain their internalized self/other views. A fearful style of attachment is described as holding a negative view of both self and other. These individuals have a sense of unworthiness or unlovability and expect others to be rejecting and unresponsive. As a result, close relationships are avoided as a way to protect against supposedly inevitable rejection.

While cognitive working models begin to develop in childhood they continue to develop and shift in adolescence and beyond, influencing a variety of interpersonal

relationships. Self-esteem and interpersonal functioning have been found to be related to attachment style into adulthood, with romantic partners and family members fulfilling the attachment figure role in adult relationships (Hazan & Shaver, 1987). More specifically, Collins and Read (1990) found that in heterosexual relationships individuals selected partners with whom they had a relationship that reflected the attachment style held with the opposite-sex parent. Bowlby (1973) asserts that individuals create social environments in ways that confirm their cognitive working models and create continuity of attachment patterns across the lifespan. It is important to note, however, that adult attachment is not necessarily a fluid continuation of childhood attachment. An individual might develop a certain attachment style as a child, but attachment experiences in adolescence and adulthood might challenge and alter the childhood attachment style. Childhood attachment provides the basis for adult attachment, but it is somewhat malleable as new experiences and interactions take place. The adults in the described studies were presumably choosing partners who validated the cognitive working models they held at that time, which are influenced by but not necessarily the same as the cognitive working model held in childhood.

Attachment does not, however, only influence adulthood in romantic relationships. A person's approach to his or her work reflects the traits present in the different attachment styles (Hazan & Shaver, 1990). For example, secure individuals were found to be confident in their work, and avoidant individuals used their work to avoid social interaction, which reflects the desire of avoidant people to not engage with

others. These results support the idea that attachment style affects various aspects of adult life.

Cognitive working models are thought to greatly influence one's social interaction (Bartholomew, 1990) which is related to the research on romantic relationships. Adult emotion regulation is also affected by attachment style (Collins, 1996; Feeney, 1995; Fuendeling, 1998; Mikulincer & Orbach, 1995; Nelson, 2000). For example, in an investigation on adult attachment, Feeney (1995) reported that securely attached individuals were not likely to control their negative emotions while avoidant participants tended to avoid acknowledging distress. The four attachment styles also had different responses to anger situations. Secure individuals tended to negotiate in anger situations, preoccupied individuals exerted indirect influence over the situation, dismissing individuals avoided the situation, and fearful individuals became aggressive (Feeney, 1995). Furthermore, Collins (1996) found that dismissing or fearful adults reported less distress than secure adults and were more likely to state they felt unemotional in an emotional situation. Collins suggests her findings reflect the importance of incorporating both cognitive and emotional processes when investigating attachment style and emotional behavior, which highlights the influence of cognitions on emotional processing.

Researchers have attempted to identify the various relationships between attachment style and emotion regulation. For example, Bartholomew suggests that dismissing adults tend to isolate themselves from negative affective experiences, which serves to avoid the anger and anxiety expected to follow activation of the attachment

system. In other words, a dismissing style is a protective mechanism against the negative emotions associated with attachment relationships (Bartholomew, 1990). Feeney (1995) suggests preoccupied individuals crave closeness in their relationships, but do not see themselves as worthy of affection. Therefore, it is not surprising these individuals responded to anger in ways that are non-confrontive and indirect.

Research has supported the assertion that attachment style and emotion regulation are connected in some manner. Given that attachment styles reflect either a positive or negative view of self and other, it is possible that these self and other views reflect deeper constructs or schemas that might give additional insight into how attachment style and emotion regulation are connected. One intuitive association is between emotional evaluation and the view of self. Perhaps the view of self in attachment style is related to a person's emotional evaluation (i.e. how he or she judges an emotion). With this conceptualization, a positive view of self could be linked to a positive evaluation of emotions. In other words, a positive emotional evaluation might be a reflection of a positive view of the self in general, indicating a person who views the self as worthy of love and affection. The converse also might be true, with a negative emotional evaluation being linked to a view of the self as unlovable and unworthy of affection. The evaluation of the emotion may be a manifestation of a deeper sense of either self-acceptance or self-criticism.

Similar to the view of the self, the view of the other in attachment theory may be conceptualized as reflecting a deeper construct or schema. Specifically, the view of others may manifest itself in one's tendency to inhibit or suppress emotional expression.

Individuals who have a negative view of others might tend to inhibit their emotions because they might not think that another person is likely to be responsive or supportive. On the other hand, individuals with a positive view of others might feel comfortable expressing emotions since they may expect a supporting and caring response. In each case, the way an individual expects others to react to an expression of emotions influences the tendency to be emotionally expressive, suggesting that the view of other plays a role in emotional expressivity.

With these conceptualizations of self and other in mind, the four attachment styles can be described in terms of emotional evaluation and likelihood to inhibit emotions (see Appendix B). The figure in Appendix B depicts theoretical relationships between attachment style, emotion inhibition, and emotional evaluation. In order to investigate the manner in which these three constructs intersect, the current study measures individuals' naturally occurring emotional evaluation, attachment style, and emotion inhibition to assess whether attachment style predicts emotional evaluation and emotion inhibition. If attachment style is in fact correlated with these constructs in the manner hypothesized, the assertion that attachment style influences the development of emotional evaluation styles will be supported.

In addition to shedding light on attachment style as a possible influence on the development of emotion regulation styles, examining the proposed relationships between attachment style, emotion inhibition, and emotional evaluation serves to potentially further the REQ's validity. The questionnaires used to tap attachment style (the Relationship Scales Questionnaire; Griffin & Bartholomew, 1994b) and emotion

inhibition (the suppression scale of the Emotion Regulation Questionnaire; Gross & John, 2003) have solid psychometric properties and are used widely in the literature (Griffin & Bartholomew, 1994b; Gross & John, 2003; John & Gross, 2004; Koole & Jostmann, 2004; Sherry, Lyddon, & Henson, in press; Vuorela & Nummenmaa, 2004; Waskowic & Chartier, 2003). Results that support the theorized relationships depicted in Appendix B would provide further construct validation for the REQ by suggesting that the questionnaire is a valid and adequate measure of emotional evaluation.

Need for a Measure Addressing Emotional Evaluation

The current literature on secondary emotions, meta-cognitions, rumination, and mindfulness meditation suggests that the promotion of an aware, non-judgmental evaluation of emotions can lead to improved health outcomes. As the literature and interest in this area grows, so does the need for a measure that taps emotional evaluation for use in clinical and empirical arenas. While there are questionnaires available that address topics related to emotional evaluation, such as emotional clarity and ambivalence over emotional expression, they do not address emotional evaluation specific to a variety of emotions.

The REQ was developed to fill this gap. The REQ assesses how individuals evaluate themselves along several dimensions when they experience various core emotions. The purpose of this questionnaire is to assess emotional reactions to the self in the presence of specific emotions, not of emotions as a general category or the cognitive response to emotions. This questionnaire would be useful in settings where emotional

evaluation is a part of therapy or assessment to help provide a more complete picture of individuals' emotional processing patterns.

As previously mentioned, there are questionnaires in the literature that address response to emotions but not in the same manner as the REQ. Leahy (2002) developed a questionnaire that supports the idea that individuals tend to pass judgment on their emotional experiences. Leahy's Emotional Schema Scale (LESS) addresses emotional schemas, or "plans, concepts, and strategies employed in 'response' to an emotion." Leahy contends that individuals' schemas can either normalize or pathologize an emotion, leading to differences in duration and perceived controllability of an emotional experience. Leahy states that emotional schemas reflect "what the individual believes are appropriate plans" following an emotional experience. The notion that emotional schemas can either normalize or pathologize an emotion as well as involve beliefs about the appropriateness of actions in response to an emotion suggest schemas involve a judgment or evaluation on the part of the individual regarding his or her emotions.

The LESS asks individuals to indicate the degree to which various statements are true of them. Leahy (2002) proposes fourteen dimensions along which emotional schemas may be understood, including *validation by others* (e.g. "No one really cares about my feelings"); *comprehensibility* (e.g. "My feelings don't make sense to me"); *guilt* (e.g. "Some feelings are wrong to have"); *simplistic view of emotion* (e.g. "I like being absolutely definite about the way I feel about myself"); *higher values* (e.g. "There are higher values that I aspire to"); *control* (e.g. "I worry that I won't be able to control my feelings"); *numbness* (e.g. "Things that bother other people don't bother me"); *rational*

(e.g. “You can’t rely on your feelings to tell you what is good for you”); *duration* (e.g. “Strong feelings only last a short period of time”); *consensus* (e.g. “Everyone has feelings like mine”); *acceptance of feelings* (e.g. “I try to get rid of an unpleasant feeling immediately”); *rumination* (e.g. “When I feel down, I sit by myself and think a lot about how bad I feel”); *expression* (e.g. “I feel that I can express my feelings openly”); and *blame* (e.g. “If other people changed, I would feel a lot better”).

The relationship between the LESS subscales, the Beck Depression Inventory, and the Beck Anxiety Inventory suggest that depression is associated with greater guilt over emotions, a belief that emotions are not comprehensible, a perceived lack of control, the idea that emotions would have a long duration, less consensus with the emotions of others, and greater rumination (Leahy, 2002). Anxiety was related to guilt, rumination, less comprehensibility, less consensus with others’ emotions, belief in lack of control over emotions, and less acceptance (Leahy, 2002). These results are supportive of the idea that one’s evaluation or judgment of emotions influences mental health, and Leahy (2002) suggests these data are consistent with Wells’ and Carter’s research (1999, 2001) on the effects of meta-cognitions on worry and anxiety.

There are key differences between the LESS and the REQ. For example, the LESS addresses schemas individuals hold about their emotions as opposed to their emotional response to an emotion. Another difference is that the LESS addresses emotions as a general construct, while the REQ investigates the reaction to several specific emotions one at a time. It is hoped that the REQ’s approach of asking individuals to place themselves in a specific emotional experience might paint a more

accurate picture of their emotional response than would be the case if individuals were asked to think about emotions in a general and therefore possibly detached sense. Furthermore, the REQ could potentially be interpreted item by item to gather information regarding specific emotional responding, such as how a person feels about feeling depressed or how a person feels about feeling proud. This information might be useful in a therapeutic setting to give the clinician a very detailed look at emotional responding.

The Ruminative Responses Scale (RRS; Nolen-Hoeksema, 1991) assesses tendencies to engage in various ruminative activities when depressed. There are differences between the REQ and the RRS both in the nature and the scope of the constructs each questionnaire measures. While rumination involves reflecting upon thoughts and events, the items on the RRS describe specific actions such as "Write down what you are thinking and analyze it" and "Think 'why can't I get going.'" It is possible that there are individual differences in the manifestation of rumination that the specific nature of the RRS items fails to capture. Conversely, the REQ items are more general, asking individuals to rate themselves along dimensions such as "unlovable/lovable." What leads people to feel lovable might vary widely, and the non-specific nature of the REQ items can capture various manifestations of weak/strong, lovable/unlovable, and confused/clear-headed. Also, the items on the RRS are specific to depression, precluding this questionnaire from being used to assess emotional response to a wide range of emotional experiences as the REQ attempts to do.

The Trait Meta-Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995) instructs participants to "think about their emotions in general" and rate

their agreement to statements such as "I feel at ease about my emotions" and "Feelings give direction to life." It assesses the factors of clarity of emotions, attention to emotions, and repair of emotions. The clarity of emotions factor is perhaps the most closely related to emotional evaluation, including items such as "I can't make sense of my feelings" and "Sometimes I can't tell what my feelings are." While emotional clarity could be considered one aspect of emotional evaluation, there are many more facets to judgment of emotions than being conflicted about identifying an emotional experience. In fact, the REQ includes a subscale addressing how confused a person feels about his or her emotional experiences, but there are more aspects of emotional evaluation measured by the REQ than just clarity versus confusion. Therefore, the REQ addresses emotional evaluation more fully than does the TMMS. Another difference between the two measures is that the TMMS investigates reactions to emotions but does not engage the participant in reflection upon specific emotions, instead focusing on a general analysis of emotions. Thus, while the subscales of the TMMS items are related to emotional evaluation, they are not synonymous with how a person feels *about* feeling various specific emotions.

The title of the Ambivalence Over Emotions Questionnaire (AEQ; King & Emmons, 1990) suggests it addresses the idea of conflict over emotion regulation style which potentially could tap emotional evaluation. Its primary focus, however, is addressing ambivalence over emotional expression, not ambivalence over the emotional experience itself. There is a flavor of evaluation in some of the items (e.g. "I try to avoid sulking even when I feel like it"), but the evaluation is manifested in whether a person

tends to express his or her emotional experiences to others. The items on the REQ, on the other hand, tap a more private, personal evaluation of how a person feels about him or herself when experiencing various emotions, as opposed to a more public evaluation related to how others might react to the expression of the emotion.

The Meta-Cognitions Questionnaire (MCQ; Cartwright-Hatton & Wells, 1997) measures beliefs about worry, intrusive thoughts, and meta-cognitive processes, but as the title suggests, the questionnaire is directed at the cognitive response to worry, not the emotional response. For example, a sample item "Worrying helps me cope" taps a belief about worry and its role as a coping mechanism, not about the emotions that arise in response to worry. The REQ attempts to assess the more immediate evaluation of self in response to an emotion that theoretically could occur before any cognitive thought takes place. Furthermore, the MCQ does not address a wide range of emotional experiences, but is specific to the worry component of anxiety.

Purpose of Questionnaire Validation

A key consideration in scale development is the measure's validity, which refers to whether the questionnaire addresses the constructs or ideas it intends to address (Myers & Hansen, 1997). A measure that purports to address a specific construct yet in fact addresses another is of little use to researchers or clinicians, making validity an important consideration when determining the utility and quality of a questionnaire. There are several dimensions to validity that are often discussed. *Face validity* is perhaps the most simple; it refers to whether the intention of a measure is self-evident (Myers & Hansen, 1997). *Content validity* refers to the "degree to which the content of a measure reflects

the content of what is measured" (Myers & Hansen 1997). In other words, it addresses whether the questionnaire items are an accurate representation of the construct of interest. *Construct validity* assesses the degree to which questionnaire scores accurately measure a trait or theoretical construct (Ellis & Bluestein, 1991). For example, a questionnaire that promotes itself as a measure of intelligence yet consists of items that tap self-esteem regarding academics would not have adequate construct validity as a measure of intelligence. Methods of measuring construct validity may include investigating whether the questionnaire of interest follows expected patterns with other questionnaires (Myers & Hansen, 1997). The questionnaire of interest may be expected to correlate with questionnaires that assess a related or similar idea (i.e. convergent validity) or to exhibit a low correlation with questionnaires that address unrelated or dissimilar ideas (i.e. discriminant validity). *Predictive validity* refers to the degree to which scores on a measure yield information that predicts actual behavior or performance (Myers & Hansen, 1997). For example, in the current study the ability of scores on the REQ to predict duration of emotional, cognitive, and physiological arousal will serve as a measure of predictive validity.

For years the prevailing methodology for determining validity was to address content, construct, and criterion-related validity (the latter term referring to predictive, convergent, and discriminant validity); this three-pronged approach was termed the "trinitarian view" (Anastasi, 1994; Ellis & Bluestein, 1991; Schilling, 2004). However, this approach has been criticized because in practice researchers often incorporate the one of the three validation procedures thought to be best-suited for the anticipated purposes of

the test (Ellis & Bluestein, 1991). Anastasi (1994) suggests that a negative outcome of the trinitarian view of validation is researchers' viewing the different validation aspects as items to be "[ticked] off in a checklist fashion" regardless of the nature or purpose of the particular test. Both of these criticisms suggest that the trinitarian view of validity diverges from the true purpose of validation by making validation a finite process that does not account for the theoretical underpinnings of a measure.

An alternative view to the trinitarian view of test validation is termed the "unitarian view," which promotes the utilization of all three validity strategies during the process of test development as opposed to validation being a separate, last-stage process (Anastasi, 1986; Ellis & Bluestein, 1991). To describe how the unitarian view might be reflected in test development, Anastasi (1986) suggests that the validation process begin with the formulation of construct definitions, often based on theory, research, or observation, which is followed by the development of test items to fit the construct definitions. Empirical item analysis follows, resulting in a selection process of the most effective items. This process is in turn followed by further analyses, such as factor analysis and validation and cross-validation of scores against external criteria (Anastasi, 1986).

An example of a measure developed and validated as Anastasi suggests is the Emotional Expressivity Scale (EES; Kring, Smith, and Neale, 1994). The authors first defined emotional expressivity, the construct they wished to measure, and then generated items to fit their definition (Kring, Smith, & Neale, 1994). The authors note they were careful to produce a set of items that addressed emotional expressivity alone and not an

overlapping idea, thereby increasing the construct validity at the stage of item development. The authors then gave the questionnaire to six separate samples of individuals. Item analysis following the first administration ensured that overly difficult or easy items were not included in the final version of the EES; 17 of the original 40 items met the desirable psychometric criteria outlined by the authors and were included in the final version (Kring, Smith, & Neale, 1994). Later samples completed the finalized EES along with other questionnaires to address convergent and discriminant validity. Scores on the EES were also compared with naturally-occurring emotional expression and with parental ratings of general expressiveness, serving to validate the measure with external criteria, as suggested by Anastasi (1986). Validation procedures following the same outline as Kring, Smith, and Neal's work are found elsewhere in the literature, such as Neff's validation of the Self-Compassion Scale (2003a).

Initial Development of the REQ

The investigator recently developed the REQ to assess how individuals evaluate themselves along several dimensions when they experience various core emotions. The current form of the REQ is a result of several stages of development with validation being considered throughout, as promoted by Ellis and Bluestein (1991) and Anastasi (1986) and modeled by Kring, Smith, and Neale (1994) and Neff (2003a). An important initial decision was how to describe the emotions on the questionnaire. While personal and clinical observation and theories such as mindfulness informed the investigator's conceptualization of reactions to emotions, which is an approach to item construction

Anastasi (1986) suggests can increase the measure's content and construct validity, it remained unclear how to best tap emotional evaluation on the REQ.

Similar to Kring, Smith, & Neale's (1994) development of the EES, early versions of the REQ helped establish the items to be included in the final version of the measure. To determine the most effective approach to describe emotional evaluation, various types of emotion descriptions were developed and then presented to pilot subjects. A preliminary approach to the emotion descriptions was using vignettes to describe emotional situations, with participants rating their evaluation of various emotions in response to the described situations. Two forms of the questionnaire featuring vignettes of varying length were developed. The longer form provided descriptions four to five sentences in length, while the briefer descriptions consisted of two to three sentences.

Another potential method of describing the emotions was to provide a general description of each emotion and ask participants to think of a time in their lives when they experienced a similar feeling. An example of the briefer, more general description is "People tend to feel sad when they have experienced loss or disappointment. Think of a recent situation in which you have felt sad."

To help determine whether the long vignette, short vignette, or general description approach might be best, pilot subjects met with the investigator in small groups and viewed the three different versions of the items. They were asked to think about which version provided the most personalized, subjective approach to each emotion. Feedback from research participants suggested that the briefer, more general version was preferred,

with participants reporting being able to "get into" the emotional experience more effectively when instructed to think about a personal situation.

Along with emotion descriptions, it was also necessary to develop subscales upon which participants would be asked to assess themselves while experiencing various emotions. Originally nine subscales or dimensions were included on the questionnaire, including bad/good, weak/strong, unlovable/lovable, defective/whole, out of control/stable, unworthy/worthy, incompetent/competent, abnormal or disturbed/normal or healthy, and confused/clear-headed. Initial data collections, however, showed high redundancy among the nine subscales, indicating it would be more effective to decrease the number of dimensions. Therefore, the subscales weak/strong, unlovable/lovable, and confused/clear-headed were included in the final version, both because scores on the subscales were not mutually exclusive and because they seemed to assess qualitatively distinct ideas.

Initial Validation of the REQ

In accordance with Anastasi (1986), Kring, Smith, and Neale (1994), and Neff (2003a), the validation of the REQ involved a multistage process including a factor analysis and an investigation of its convergent and discriminant validity. The REQ was administered to three separate samples (N = 172, 202, and 345; total N = 719). For the factor analysis, all 719 REQ scores were analyzed together.

Factor Analysis

To assess whether the items loaded on separate factors, a principle axis varimax rotation factor analysis was calculated. The analysis yielded two factors, accounting for

28.50% and 15.28% of the variance. Using a cut-off score of .4 for factor loadings, the three subscales of the sad, embarrassed, and anxious emotions loaded onto the first factor, titled unpleasant emotions. The three subscales of the proud and excited emotions loaded onto the second factor, titled pleasant emotions. The factor loadings are presented in Appendix C.

The "weak/strong" subscale of the item addressing anger yielded atypical results, as it did not load cleanly onto either factor. The "unlovable/lovable" and "confused/clear-headed" subscales of the angry item loaded onto the unpleasant emotions factor, while the "weak/strong" subscale loaded relatively equally on both the pleasant and unpleasant emotions factor. This result suggests that the weak/strong subscale is not as strongly associated with anger as it is with embarrassment, sadness, or anxiety/fear. Anger is different from these other emotions, however, in that it is often experienced along with a sense of power and energy, allowing participants to endorse feeling strong when experiencing anger more often than they endorsed this accepting evaluation option on the other unpleasant emotions. Yet, the factor loading value of the weak/strong subscale for anger is higher for the unpleasant emotions factor than the pleasant emotions factor (.33 versus .23), and therefore the subscale will be included in the unpleasant emotions factor along with the other two anger subscales.

The two-factor outcome of the factor analysis suggests that the scoring of the REQ should result in two scales. The sum of the subscales of the unpleasant emotions will be the Unpleasant Emotions Scale (UES), while the sum of the subscales of the pleasant emotions will be the Pleasant Emotions Scale (PES).

Convergent and Discriminant Validity of the Unpleasant Emotions Scale

Previous data collections have yielded adequate convergent validity of the REQ. Individuals with higher Unpleasant Emotions Scale scores (i.e. who, relative to others, reported feeling better about themselves when experiencing unpleasant or uncomfortable emotions) also had higher self-esteem, self-compassion, and emotional clarity, and also exhibited fewer tendencies to ruminate or inhibit expression of their emotions. The UES was moderately correlated with the Self-Acceptance Scale (Rude & Pennebaker, unpublished) and with Rosenberg's Self-Esteem Scale (Rosenberg, 1965). The REQ Unpleasant Emotions scale was also moderately correlated with the Trait Meta-Mood Scale's clarity factor (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995), which assesses how clear individuals are regarding their emotional experience, and the secure factor of the Relationship Scales Questionnaire (Griffin and Bartholomew, 1994b) which suggests these individuals reported a positive view of self and others. The UES was also moderately negatively correlated with scores on the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), which measures current depression, the Inventory to Diagnose Depression – Lifetime (Zimmerman & Coryell, 1987), which assesses previous depression, the Ruminative Responses Scale (Nolen-Hoeksema, 1991), which measures tendency to ruminate over depressive feelings, and the White Bear Suppression Inventory (Wegner & Zanakos, 1994), which measures tendency to inhibit emotional thoughts. As expected, the scale was also negatively correlated with the neuroticism scale of the Big Five Inventory (McCrae & Costa, 1987).

The Unpleasant Emotions Scale also exhibited adequate discriminant validity by its low correlations with factors unrelated to emotional evaluation, such as the agreeableness scale of the Big Five Inventory.

Convergent Validity of the Pleasant Emotions Scale

While the Pleasant Emotions Scale yielded promising validity results, its correlations are not as compelling as those for the Unpleasant Emotions Scale. Presumably, individuals generally feel relatively positively about themselves when experiencing pleasant or comfortable emotions, while there is more variation in their evaluation of unpleasant emotions. This lower variability in scores on the PES results in lower predictive power and therefore lower correlations. Also, there are only two pleasant emotions on the REQ, as opposed to four unpleasant emotions, another reason for the lower correlations. However, scores on the Pleasant Emotions Scale (i.e. how positively a person feels about him or herself when feeling pleasant emotions) were moderately correlated with the extroversion scale of the Big Five Inventory, the secure scale of the Relationship Scales Questionnaire, and the Self-Acceptance scale. They were also moderately correlated with self-esteem, the openness to new experiences scale and conscientiousness scales of the Big Five Inventory, and the emotional processing scale of the Stanton Emotional Approach Questionnaire (Stanton, Kirk, Cameron, & Danoff-Burg, 2000).

The correlations between scores on the two subscales of the REQ and other questionnaires are presented in Appendix D. While the relationships between the PES and related measures are not as strong as those for the UES, it is important to note that

the PES yielded some significant relationships that the UES did not. For example, the second administration resulted in a significant relationship between scores on the PES and the emotional expression factor of the Stanton Emotional Approach Scale, while the relationship between scores on the emotional expression factor and the UES were not significant. A similar pattern was found with the openness and agreeableness scales of the Big Five Inventory from the second administration, with scores on these scales each having a significant relationship with scores on the PES but not the UES. While scores on the PES may have less variability and therefore less predictive power than the UES, there is some degree of complementarity between the UES and the PES, with each being related to scores on related measures that the other is not. Each scale, therefore, contributes distinct information about an individual's emotional evaluation profile and is worth including in analyses.

Reliability

The scores on the REQ from two separate administrations yielded promising test-retest reliability values. Reliability refers to the consistency of scores on a questionnaire, and test-retest reliability specifically addresses the consistency of an individual's scores on the same measure at two or more points in time (Myers & Hansen, 1997). Scores on the Unpleasant Emotions Scale from administrations one month apart were significantly correlated ($r = .74$; $p < .01$), and scores on the Pleasant Emotions Scale from those same administrations were also significantly correlated ($r = .60$; $p < .01$). The UES and PES also exhibited adequate internal consistency, which is a measure of the homogeneity of items (Heppner, Kivlighan, & Wampold, 1999), or how well the set of items measure the

same underlying construct (Jensen, 2003), with Cronbach's alpha = .86 and .79, respectively.

Current Study – Primary Hypotheses

The concept behind the REQ is that an accepting, non-judgmental attitude towards emotional experiences allows people to process their emotions efficiently and effectively. Ineffective or inefficient processing can lead to emotional dysregulation - getting "stuck" in a certain emotional experience or exhibiting an emotional outburst at an inopportune time. The REQ attempts to assess the degree to which individuals tend to have an accepting/judgmental attitude towards their emotions, which presumably can help determine which individuals are prone to become mired in emotional distress and perhaps struggle with mood disorders such as depression and anxiety. Individuals with high scores on the REQ report exhibiting a more positive emotional evaluation, and therefore these individuals are expected to come to terms more effectively with a distressing situation and to ruminate less following a distressing situation.

The proposed study will attempt to expand upon the previous validation research by investigating the REQ's predictive validity. This procedure follows the validation steps outlined by Anastasi (1986), with the final validation steps comparing scores on the measure with external criteria. Specifically, the study will assess how well emotional evaluation predicts physiological, emotional, and cognitive outcomes. The study will expose individuals to a mildly distressing situation and will examine the length of time before they return to an emotional and physiological baseline. The study will also examine duration of rumination about the situation. Furthermore, the study will attempt

to assess the construct validity data of the REQ by investigating its relationship to other questionnaires assessing constructs related to judgment of emotions. The following primary hypotheses reflect the theory that REQ scores are related to how individuals successfully process emotions:

Hypothesis #1: Following a negative mood induction, individuals with less emotional acceptance will exhibit a slower return to emotional baseline as indicated by increased emotional arousal during the remainder of the study when compared to participants with more emotional acceptance. Emotional arousal will be measured by monitoring skin conductance, heart rate, and skin temperature, and by self-report of mood. The physiological and self-report measurements gathered prior to the mood induction will serve as the emotional baseline.

Hypothesis #2: Participants with more emotional acceptance will ruminate less following the negative mood induction, with rumination being indicated by recognition response time to words related to the negative mood induction.

Hypothesis #3: The REQ will be moderately correlated with questionnaires assessing ideas related to emotional evaluation, including the accept without judgment subscale of the Kentucky Inventory of Mindfulness Skills, the Trait Meta-Mood Scale – clarity factor, Emotion Regulation Questionnaire – suppression and reappraisal factors, the comprehensibility, control, acceptance of emotions, guilt, rumination, and expression

subscales of the Leahy Emotional Schema Scale, the Rosenberg Self-Esteem Scale, the State-Trait Anxiety Inventory – trait version, and the Ruminative Responses Scale.

Secondary Hypotheses

Secondary analyses will explore the relationship between emotional evaluation as measured by the REQ, the four attachment styles as measured by the Relationship Scales Questionnaire, and inhibition as measured by the suppression subscale of the Emotion Regulation Questionnaire. These analyses will serve to investigate the relationship between attachment style, emotional evaluation, and inhibition in an effort to more fully understand the potential influence of attachment style on the development of either an accepting or a non-accepting emotional evaluation style. Using the proposed relationships between self/other views and emotional expression and evaluation outlined in Appendix B, the following secondary hypotheses are proposed:

Hypothesis #1: Secure individuals have a positive view of self and others, so the more secure an individual is, the higher their emotional acceptance scores will be and the less they will tend to inhibit their emotions

Hypothesis #2: Dismissing individuals have a positive view of self and a negative view of others, so the more dismissing an individual is, the higher their emotional acceptance scores will be and the more they will tend to inhibit their emotions.

Hypothesis #3: Preoccupied individuals have a negative view of self and a positive view of others, so the more preoccupied an individual is, the lower their emotional acceptance scores will be and the less they will tend to inhibit their emotions.

Hypothesis #4: Fearful individuals have a negative view of self and other, so the more fearful an individual is, the lower their emotional acceptance scores will be and the more they will tend to inhibit their emotions.

CHAPTER THREE

Methods

Participants

Participants in the study were undergraduate students enrolled in an educational psychology course at the University of Texas at Austin during the spring 2006 semester. Data collection was in conjunction with the dissertation of another graduate student, Veronica Santos. Her study involves two experimental groups and a control group, and the control group served as the participants for the current study. Two hundred and five participants participated in the study with 84 participants in the control group.

Measures

Cronbach's alpha internal consistency coefficients were calculated for scores on each of the measures described below in the present sample. They are presented in Appendix E.

Ruminative Responses Scale (RRS; Nolen-Hoeksema, 1991; see Appendix F)

This 22-item paper-and-pencil measure asks participants to rate on a four-point Likert scale their tendency to engage in certain behaviors when feeling down, sad, or depressed. Example items include "Think about how alone you feel" and "Write down what you are thinking and analyze it." Scores can range from 22 to 88. Scores on the RRS have demonstrated adequate convergent validity, internal consistency, and test-retest reliability (Conway, Csank, Holm & Blake, 2000; Treynor, Gonzalez & Nolen-Hoeksema, 2003).

Emotion Regulation Questionnaire (ERQ; Gross & John, 2003; see Appendix G)

This 10-item paper-and-pencil questionnaire consists of two factors: suppression and reappraisal. On a seven-point Likert scale, participants rate their agreement of statements regarding either emotional suppression (e.g. "I control my emotions by not expressing them") or reappraisal (e.g. "When I want to feel more positive emotion, I change the way I'm thinking about the situation"). Scores can range from 10 to 70. The ERQ has exhibited adequate internal consistency, and the two factors have been shown to be independent of each other (Gross and John, 2003). Scores on the four-item suppression factor have demonstrated adequate internal consistency across four separate administrations, with alphas = .73, .68, .75, and .76. Test-retest reliability for both the suppression and reappraisal factors from administrations three months apart was .69. The suppression scale has demonstrated adequate convergent and discriminant validity data, such as being negatively correlated with scores on the venting subscale of the COPE (Carver, Scheier, & Weintraub, 1989; $r = -.43$, $p < .05$), positively correlated with scores on Nolen-Hoeksema and Morrow's (1991) measure of rumination ($r = .18$, $p < .05$), and non-significantly correlated with the neuroticism scale of the Big Five Inventory ($r = .03$; $p > .05$; Gross & John, 2003). The suppression factor served as a measure of emotion inhibition in the current study.

Relationship Scales Questionnaire (RSQ; Griffin & Bartholomew, 1994b; see Appendix H)

This measure served as a measure of attachment style by assessing the degree to which individuals feel their interpersonal style corresponds to statements reflecting the

four attachment styles of secure, preoccupied, fearful, and dismissing. The RSQ is a 30-item paper-and-pencil instrument that draws from Hazan and Shaver's (1987) attachment measure, Bartholomew and Horowitz's (1991) Relationship Questionnaire, and Collins and Read's (1990) Adult Attachment Scale. On a five-point scale, participants rate the extent to which each statement best describes their characteristic style in close relationships and means are calculated for each of the four attachment dimensions. Scores on the secure and dismissing subscales can range from 5 to 25, and scores on the preoccupied and fearful subscales can range from 4 to 20. The RSQ was designed as a continuous measure of adult attachment that provides an attachment profile for each participant rather than a categorical assignment, which reflects the idea that individuals might have traits in each style. As described in the previous section on attachment and depicted in Appendix B, the four attachment styles can be conceptualized in terms of the view of the self as worthy and loveable along with the view of the other as supportive and responsive. The RSQ assesses the degree to which an individual views both the self and the other in either a positive or a negative light to help determine the degree to which he or she reflects each of the four attachment styles.

To help inform whether all four attachment styles assess unique patterns of self/other views, Waskowic and Chartier (2003) conducted first-order correlations among the four attachment styles as determined by the RSQ. Any one attachment style being highly positively or negatively correlated with the other three styles might suggest that assessing all four styles is redundant. They found that only three of the six correlations were significant (secure-dismissing, secure-fearful, and fearful-dismissing; all p's $< .01$).

The authors suggest that these results indicate that divergent constructs are being measured by the RSQ. Furthermore, fearful attachment as measured by the RSQ has been included in empirical investigations independent from the other three attachment styles (Dutton, Starzomski & Ryan, 1996), indicating the four attachment styles are independent constructs. Thus, while there are relational patterns among the four attachment styles, each style is addressing a distinct idea and exploring individual differences on all four styles is worthwhile.

Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961; see Appendix I)

The BDI was included in the present study as a screening device. Participants with a BDI score of 20 or greater were excluded from the study to avoid exposing participants who are depressed or vulnerable to depression to a negative mood induction.

The BDI is a widely used scale of current depression. Participants are presented with 20 groups of four statements reflecting intensifying degrees of depressive factors (e.g. sadness, crying, decreased appetite) and are asked to choose the statement that best describes how they have felt for the previous two weeks. Scores can range from 0 to 60. The measure has exhibited adequate test-retest reliability and adequate internal consistency (Beck, Steer, & Garbin, 1988).

Speilberger State-Trait Anxiety Inventory – Trait form (STAI; Speilberger, Gorsuch, & Lushene, 1970; see Appendix J)

Participants are asked to rate on a four-point Likert scale how often they experience twenty symptoms of anxiety, such as "I am a steady person." Scores can

range from 20 to 80. The trait version assesses anxiety as a general trait, not an individual's current level of anxiety. Scores on the measure have yielded adequate internal consistency and test-retest reliability (Gaudry, Vagg, & Spielberger, 1975; Spielberger, Sydeman, Owen & Marsh, 1999).

Positive and Negative Affect Schedule (PANAS, Watson, Clark, & Tellegen, 1988; see Appendix K)

The Positive and Negative Affect Schedule served as a measure of mood throughout the study. The scale consists of two 8-item scales, one assessing positive affect and one assessing negative affect. On a five-point scale participants rate the extent to which they experienced a mood state in a specified time period. Scores for each subscale can range from 8 to 40. Both the Positive Affect and Negative Affect scales have demonstrated internal consistency, with Cronbach's coefficient alphas ranging between .86 to .90 for the Positive Affect scale, and .84 to .87 for the Negative Affect scale. The PANAS has exhibited adequate construct validity, with the Positive Affect scale negatively correlated and the Negative Affect scale positively correlated with the BDI (Beck et al., 1961). The Negative Affect scale also significantly correlated with a measure of general distress (Watson et al., 1988).

Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004; see Appendix L)

The Kentucky Inventory of Mindfulness Skills is a 36 item paper-and-pencil measure that assesses components of mindfulness in everyday life. Factor analysis indicated four factors: observe, describe, act with awareness, and accept without

judgment. The accept without judgment subscale, which consists of nine items focusing on the respondents' tendency to be nonjudgmental about experience in the moment, is included in the present study. Participants rate on a five-point Likert scale how true statements are for them. An example item is "I tell myself that I shouldn't be feeling the way I'm feeling." Scores on the accept without judgment scale can range from 9 to 45. Scores on the accept without judgment scale have yielded a coefficient alpha of .87, with a test-retest reliability value of .83. Construct validity has included a negative correlation with the neuroticism scale of the Big Five Inventory (McCrae & Costa, 1987), the global severity index of the Brief Symptom Inventory (Derogatis, 1992), the difficulty identifying feelings and difficulty describing feelings scales of the Toronto Alexithymia Scale (TAS-20; Bagby, Parker, & Taylor, 1993), and the Acceptance and Action Questionnaire (AAQ; Hayes, Strosahl, Wilson, Bissett, Batten, et al., 2004).

Leahy Emotional Schema Scale – guilt, rumination, control, acceptance of emotions, comprehensibility, and expression subscales (LESS; Leahy, 2002; see Appendix M)

As previously described, the Leahy Emotional Schema Scale is a paper-and-pencil measure that addresses schemas individuals hold about their emotions along 14 different dimensions (Leahy, 2002). In the current study, 6 of those 14 dimensions were included: guilt, rumination, control, acceptance of emotions, comprehensibility, and expression. The number of items on each subscale differs, with two items on the expression subscale, four on the guilt subscale, five on the rumination subscale, three on the control subscale, seven on the acceptance of emotions subscale, and four on the comprehensibility subscale. Therefore, the version of the LESS included in the current

study consisted of 25 items. Participants were asked to rate on a six-point Likert scale how much they have used various statements to "deal with" their emotions in the past month. The possible range of scores for the subscales included in the current study is 25-150. The comprehensibility, guilt, control, acceptance of feelings, and rumination subscales have all been shown to have adequate convergent validity (Leahy, 2002).

Rosenberg Self-Esteem Scale (Rosenberg, 1965; see Appendix N)

The Rosenberg Self-Esteem Scale is a 10-item paper-and-pencil measure that addresses individuals' self-esteem. Participants are asked to rate on a four-point Likert scale their agreement to items such as "I feel that I have a number of good qualities" and "On the whole, I am satisfied with myself." Scores can range from 10 to 40. The Rosenberg Self-Esteem Scale has been shown to have adequate convergent validity (Butler & Gasson, 2006; Rosenberg, 1965) and reliability, with a Cronbach's alpha level of .92 (Johnson, McNair, Vojick, Congdon, Monacelli & Lamont, 2006).

Trait Meta-Mood Scale – clarity factor (TMMS; (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995; see Appendix O)

The Trait Meta-Mood Scale is a paper-and-pencil measure that assesses the factors of clarity of emotions, attention to emotions, and repair of emotions. In the current study only the clarity of emotions factor was included. The 11-item clarity of emotions factor asks participants to rate on a five-point Likert scale their agreement to statements such as "I am usually very clear about my feelings." Scores can range from 11 to 55. Salovey et al (1995) found reliability scores for the TMMS to range from .82 to

.87, and Coffey, Berenbaum, and Kerns (2003) found the clarity factor to demonstrate adequate convergent and discriminant validity.

Physiological Measurements

The three markers of physiological arousal were measured with a J&J Engineering I-330-C2 6+ channel system. The physiological data were collected by wrapping electrode cuffs around the ring and index fingers of the participants' non-dominant hand. The pads of the fingers were first wiped with an alcohol pad to remove excess oil and to prepare the hand for the electrode cuffs which were secured around the fingers with Velcro. The hand was then strapped to a lap desk with Velcro strips to decrease extraneous movement of the sensors.

Heart rate.

Heart rate served as one of the measures of emotional arousal. Heart rate has been shown to increase during stress (Barger, Kircher & Croyle, 1997), and it was expected to be elevated during performance of the RAT task and following receipt of failure feedback. The unit of measure for heart rate was beats per minute (Campbell, 2004). The degree to which heart rate remained elevated during the later stages of the session following failure feedback was interpreted as continuing experience of unpleasant emotion. Heart rate is used extensively in the literature as an indicator of emotional arousal following inhibition of emotional expression (Gross & Levenson, 1993; Kraemer & Hastrup, 1988), degree of incentive/motivation (Tranel, 1983), behavioral activation (Fowles, 1980), level of arousal during a speech (Barger, Kircher, & Croyle, 1997), and level of arousal when discussing traumatic events (Pennebaker, Hughes, & O'Heeron,

1987). However, heart rate has also been found to be susceptible to factors such as movement and deep breaths (Suckfüll, 2000), and the patterns in heart rate that indicate arousal are not always consistent because of peripheral resistance (Siddle & Turpin, 1980). The heart rate process has been described as biased, and measuring heart rate in conjunction with other measurements of arousal is beneficial to neutralize the variance observed in heart rate patterns caused by external factors (Suckfüll, 2000).

Skin conductance.

Skin conductance served as one of the measures of emotional arousal. Skin conductance has also been shown to increase during stress (Barger, Kircher & Croyle, 1997; Lanzetta, Cartwright-Smith & Kleck, 1976; Pennebaker & Chew, 1985). The unit of measure for skin conductance was micromhos (uMho; Campbell, 2004). A mho is equivalent to a siemens, which is the metric unit of electrical conductance ("Siemens," 2006). Like heart rate, skin conductance was expected to be elevated during the RAT and following the negative mood induction. The degree to which skin conductance remained elevated throughout the session served as an indicator of continued negative emotional experience. Skin conductance has also been used widely in research involving emotional arousal, including as a measure of emotion inhibition (Buck, Miller & Caul, 1974; Pennebaker & Chew, 1985), degree of incentive/motivation (Tranel, 1983), responsiveness to threat (Fowles, 1980), level of expressiveness (Lanzetta, Cartwright,-Smith & Kleck, 1976), arousal during a speech (Barger, Kircher, & Croyle, 1997), arousal following emotion inhibition (Kramer & Hastrup, 1988), and level of behavioral activation when discussing traumatic events (Pennebaker, Hughes & O'Heeron, 1987).

Skin temperature.

Skin temperature was a third measure of emotional arousal. It is defined as "an index of blood flow changes from construction to dilation of blood vessels (Wofford, 2001), and it has been found to decrease in stressful or threatening situations (Boudewyns, 1976; Rimm-Kaufman & Kagan, 1996; Svebak, Storfjell & Dalen, 1982). Therefore, skin temperature was expected to decrease during the RAT and negative feedback. Skin temperature was measured in degrees Fahrenheit (Campbell, 2004). The degree to which skin temperature remained lowered throughout the study served as an indicator of continued emotional arousal. Skin temperature has been used in prior research as a measure of stress (Wofford, 2001), time pressure (Wofford, 2001), rest or relaxation (with rest being indicated by increases in skin temperature; McFarland, 1985); cognitive load (McFarland, 1985), anxiety level (Borden, Lowenbraun, Wolff & Jones, 1993; Gerardi, Keane, Cahoon & Klauminzer, 1994), anger (Böddeker & Stemmler, 2000), and responding of the autonomic nervous system (Min, Chung & Min, 2005).

It is important to note that all physiological measurements are subject to extraneous variability caused by internal factors, such as positive affect states, mental exertion, and respiration (Freeman, Horner & Reichle, 1999). Therefore, while physiological measurements are a widely used indicator of arousal, their susceptibility to uncontrolled external factors preclude them from being infallible gauges of emotional arousal.

Mood Induction Procedure

To induce a sense of failure, participants engaged in the failure version of the Remote Associations Task (RAT; Mednick, 1962). The RAT involves asking participants to solve 10 problems, each of which involves finding a fourth word that is associated with three provided words (e.g. "box" is the correct answer to the provided words "soap-tissue-shoe"). On average, 1 of the 10 problems is solved correctly (Brown & Dutton, 1995), and this procedure has been shown to successfully produce a sense of failure (Watkins, 2004). In the current study, the number of problems was increased from 10 to 15 to increase the length of the task in an attempt to heighten the salience of the mood induction. The additional five problems were deemed by McFarlin and Blascovich (1984) as being of the same difficulty level as the original 10 problems used by Mednick. To further heighten the salience of the task, participants were told the RAT is a measure of problem solving ability and that most people answer between seven and nine of the fifteen problems correctly. In accordance with McFarlin and Blascovich (1984), participants were given their actual score on the RAT since the difficulty of the task precluded the need for falsification of scores to induce a sense of failure. Participants were, however, given falsified feedback about the percentile rank that corresponded with their score.

Rumination Assessment Task

The speed with which participants were able to recognize incomplete words related to failure as compared to unrelated words was used to infer continued priming of failure-related constructs. Participants viewed words on a computer screen that had

several of the letters blocked out. The words were either neutral (e.g. "automobile") or related to failure (e.g. "disappointed"). Participants were instructed to hit the space bar when they recognized the word and the computer recorded their response time based on when the space bar was hit. They were also asked to say the word as they hit the space bar which allowed the researcher to note the participant's word-recognition accuracy. There were 20 neutral and 20 failure-related words in the task, and word length was matched so there was an even number of long and short words in each category. Selection of the final word list was informed by results of a pilot study in which a small sample of individuals rated the difficulty of the words. Words rated as either overly difficult or easy were not included in the final word list.

Procedures

The study was separated into two phases. In phase one, participants completed an online survey consisting of a battery of questionnaires and basic demographic information. The questionnaire battery consisted of the Reactions to Emotions Questionnaire, Relationship Scales Questionnaire, Emotion Regulation Questionnaire, Kentucky Inventory of Mindfulness Skills – accept without judgment scale, Trait Meta-Mood Scale – clarity factor, six subscales of the Less Emotional Schema Scale, the State-Trait Anxiety Inventory – trait version, and the Rosenberg Self-Esteem Scale.

Following completion of phase one, participants were instructed to sign up for and attend an in-person study session, which comprised phase two of the study. Each session was conducted individually with each participant and lasted approximately an hour and a half. In order to avoid demand characteristics, the researcher attempted to

create the impression that the two phases were unrelated projects. An ID code unique to each person was used to match the data from the online survey and the study session.

Upon arrival to the session participants signed the consent form and completed the BDI. Participants with a BDI score of 20 or greater were excused from the study and were debriefed at this point. Participants then completed the PANAS to serve as a baseline measure of mood. The PANAS was completed at several points during the session to assess mood changes over time.

Next, participants were connected to the physiological monitors by placing two electrode cuffs on the ring and index fingers of their non-dominant hand. Participants then sat quietly for eight minutes to allow their heart rate, skin conductance, and skin temperature to stabilize and to allow baseline levels of these physiological measures to be recorded.

Following the baseline physiological period, participants engaged in the RAT (negative feedback) task. This task involved participants' completing 15 difficult word problems and being given false norming information to induce a sense of failure.

Participants then viewed a powerpoint presentation that discussed the biological response to emotions in a rather dry and academic way. The powerpoint presentation served as a control for the two powerpoint presentations that were used for the other study that was based on these data (Veronica Santos' dissertation). The other two powerpoints presented messages that emotions were either normal and benign and encouraged participants to accept them or that emotions should be carefully regulated and sometimes avoided. The control powerpoint seen by participants in the present dataset

was intended to raise thoughts of emotions without communicating evaluative attitudes about emotions or strategies regarding how they should be dealt with and was included because of the merging of Ms. Santos' data collection with that of the current study. Due to the neutrality of the presentation it was not thought to interfere with the emotional processing of the participants.

Upon completion of the powerpoint presentation participants completed the PANAS for a second time. They then wrote continuously for eight minutes about whatever was going through their mind at the moment. The writing instructions stated "Write about anything that you want to write about. This can include lists, notes, or stream of consciousness. There is no right or wrong topic to write about." Participants engaged in two of these writing periods during the course of the study, both to give participants time to emotionally process and to provide a time delay between the negative feedback and the later measurements of emotional arousal.

Following the first writing phase participants sat for three minutes to again allow time for emotional processing, after which they completed the PANAS for a third time. After the PANAS the second writing phase began, which lasted for 10 minutes. Participants were again asked to write about whatever was going through their mind at that time. Participants then engaged in another three minute sit period and then completed the PANAS for a fourth time.

Next, participants participated in the word response task that was used to assess cognitive arousal in regard to the negative mood induction. This task determined if

words related to the failure manipulation were still primed, which served as an indication of rumination over the negative mood induction.

Following the word response task participants were unconnected from the physiological monitors and were asked probe questions about their thoughts on the purpose of the study in an attempt to identify those participants who deduced the true nature of the study (see Appendix P). At this point the participants were fully debriefed regarding the deceptive aspects and true purpose of the study, after which they were asked to sign a consent form indicating they understood the deceptive aspects of the study and were allowing their data to be used in future analyses.

A flow-chart of the study procedures is in Appendix Q.

CHAPTER FOUR

Results

Sample Characteristics

The study took place in two phases: an online battery of questionnaires and an in-person study session. Participants were informed that completion of both phases was required to receive experimental credit for the study. However, many participants completed only the online phase, and some participants completed an alternate assignment in place of the study session because of scheduling difficulties. Therefore, the overall participant pool was divided into three different samples: the participants who completed the online questionnaires (N=202), the participants who attended a study session following their completion of the online questionnaires (N=84), and the participants who were not able to be accommodated into the session schedule and instead completed an alternate assignment (N=21). The derivation of the three samples from the general sample is described below, followed by a detailed description of each sample individually.

Description of Sample Derivation

There were 205 total participants in the study. Two hundred and two participants completed the online questionnaires, and 133 of these also attended the in-person study session. Participants in the in-person study sessions were placed into three groups for the purposes of another study. Only one of those groups (the control group for the purposes of the other study) was the focus of the present study. Eighty-four participants were assigned to the group used for the present study. Twenty-four of the 202 participants

who completed the online questionnaires could not be accommodated in the schedule for the study sessions and were given an alternate assignment in place of attending the session. The alternate assignment included completing a subset of questionnaires from the online battery in paper-and-pencil format. Three participants' data from the alternate assignments were incomplete and therefore were not included in the analyses of test-retest reliability for the REQ. Forty-eight participants failed to sign up for a study session after completing the online questionnaires. Therefore, the three samples consisted of the 202 participants who completed the online questionnaires, the 84 participants who attended a study session following their completion of the online questionnaires, and the 21 participants who were not able to be accommodated into the session schedule and instead completed a subset of the questionnaires a second time.

Description of Online (Questionnaire) Sample

Two hundred and two participants completed the online battery of questionnaires. The sample consisted of 93 females and 109 males. The age range was 18 to 35, with a mean age of 21.50 and a standard deviation of 1.99. Race and ethnicity, while often combined into one question, were addressed separately. The item assessing race was a multiple-choice item with response choices of Asian, Black, Latino/Hispanic, Native American, White, and Bi- or Multi-racial. Ethnicity was addressed in two questions. First participants were asked in a yes/no question whether they identify with an ethnic group, and then those participants who indicated they do identify with an ethnic group were asked to provide the ethnic group they identify with in an open-ended question. Seventy point three percent of the participants described their race as "White" (n=142),

13.4% as “Asian” (n=27), 6.4% as “Black” (n=13), 5.0% as “Latino/Hispanic” (n=10), 4.5% as “Bi- or Multi-racial” (n=9), and 0.5% as “Native American” (n=1). The items addressing ethnicity were inadvertently omitted from the demographics section of the online questionnaire, but ethnicity data were collected from 130 participants during a study session. Ethnicity data were not available for the 49 participants who did not attend a study session. Twenty-three point eight percent of the 130 participants indicated they identify with a specific ethnic group. Ten participants identified with an Asian ethnic group, seven with Latino/Hispanic, two with African-American, six with ethnic groups of Middle Eastern origin, one with the Jewish culture, and the remaining five identified with ethnicities from various countries in Europe and western Asia.

Description of In-Person Session Sample

Eighty-four participants completed the in-person study session and all online questionnaires. Data from12 participants were excluded because questioning of the participants following the study indicated these participants deduced the true nature behind the deceptive aspects of the study, and data from one participant were excluded because of difficulties with the physiological equipment. The final sample consisted of 71 participants, with 36 females and 35 males. The ages of these participants ranged from 18 to 28, with a mean age of 21.24 and a standard deviation of 1.66. Sixty-seven point six percent of the participants described their race as “White” (n=48), 16.9% as “Asian” (n=12), 7.0% as “Black” (n=5), 7.0% as “Bi- or Multi-racial” (n=5), and 1.4% as “Latino/Hispanic” (n=1). Seventeen participants indicated they identify with an ethnic group, with six identifying with an Asian ethnic group, two with Mexican-American, one

with African-American, three with ethnic groups of Middle Eastern origin, and the remaining five identifying with ethnicities from various countries in Europe and western Asia

Description of Alternative Session Sample

Twenty-one participants who could not be accommodated into the session schedule completed paper-and-pencil questionnaires and a demographic sheet as an alternate assignment to fulfill their course requirement. Their completion of the REQ a second time allowed for an analysis of test-retest reliability. This sample consisted of 16 males and 5 females, with ages ranging from 18 to 34. The mean age was 21.65 with a standard deviation of 3.22. Seventy-one point four percent described their race as "White" (n=15), 14.3% described their race as "Asian" (n=3), 9.5% described their race as "Black" (n=2), and 4.8% described their race as "Latino/Hispanic" (n=1). Twenty-three point eight percent stated they identify with an ethnic group, with two participants indicating they identify with Korean-American, two with African-American, and one with Indian-American.

Analyses were conducted to ensure there were no differences between the sexes or between racial groups on any variable gathered in the online data collection or the study sessions. The small N of the third sample precluded a comparison of groups for that sample. There were no significant differences between men and women or between racial groups on any of the online variables or the physiological and self-report variables collected in the study sessions for the participants in the first two samples. Therefore, the data from all participants were analyzed together.

Examination of Related Measures

The online survey included eight questionnaires yielding 17 subscales that assessed constructs deemed to be related to emotional evaluation. These were emotional clarity (as measured by the Trait Meta-Mood Scale - clarity factor); self-esteem (as measured by the Rosenberg Self-Esteem Scale); general acceptance of emotions (as measured by the Kentucky Inventory of Mindfulness Skills – accept without judgment subscale); attachment style (as measured by the Relationship Scales Questionnaire); tendency to use cognitive reappraisal and to suppress emotional expression (as measured by the reappraisal and suppression subscales of the Emotion Regulation Questionnaire, respectively); emotional schemas (as measured by the expression, guilt, control, rumination, acceptance of feelings, and comprehensibility subscales of the Leahy Emotional Schema Scale), and trait anxiety (as measured by the State-Trait Anxiety Inventory – trait version). A measure addressing tendency to ruminate (the Ruminative Responses Scale) was inadvertently omitted from the online questionnaire battery and was administered to 34 participants during the in-person study session. The means and standard deviations of the subscales are depicted in Appendix R.

Reliability

Reliability coefficients were calculated for each of the subscales. Several of the scales demonstrated adequate reliability (see Appendix E). Exceptions include the rumination and the expression subscales of the LESS, which yielded reliability coefficients of .51 and .31, respectively, and the secure, dismissing, and preoccupied subscales of the RSQ, which all yielded reliability coefficients of .41. A possible

explanation for the low coefficients of the rumination and expression subscales is that they consist of few items (five items and two items, respectively).

The reliability for the RSQ was calculated by analyzing the items for each attachment style individually. Also, the items for each of the four attachment styles were collapsed into two factors - avoidant and anxious - and the reliability was computed for each of these factors. This addition was based on Griffin and Bartholomew's (1994a) assertion that the items on the RSQ reflect "two dimensions of anxiety (or positivity of the self model) and avoidance (or positivity of the other model)" (p. 30). Griffin and Bartholomew (1994a) promote gathering reliability information at the level of self and other views since while attachment is separated into four categories for theoretical reasons, those categories are based on how individuals differ along the view of self and other dimensions. The authors note that the anxiety and avoidance dimensions should not replace the four attachment styles since the two dimensions alone provide an oversimplified picture of an individual's relational patterns (Griffin & Bartholomew, 1994a). The two dimensions do, however, provide a useful conceptualization of attachment that can be used to analyze shared variance among the items on the RSQ in addition to an analysis of the attachment styles in isolation.

Twenty-one participants who could not be accommodated in the schedule for the in-session phase of the study (as described above) completed the REQ two months following the online administration. Scores from the two administrations yielded test-retest reliability coefficients of .78 for the UES and .62 for the PES.

Correlations among REQ and Related Measures

The current study allowed for a further analysis of the REQ's construct validity by assessing how scores on the PES and UES related to scores on other questionnaires. Primary hypothesis three predicted that the REQ would be moderately correlated with questionnaires assessing ideas related to emotional evaluation, including the accept without judgment subscale of the Kentucky Inventory of Mindfulness Skills; the Trait Meta-Mood Scale – clarity factor; the Emotion Regulation Questionnaire – suppression and reappraisal factors, the Leahy Emotional Schema Scale - expression, comprehensibility, control, acceptance of emotions, rumination, and guilt subscales; the Rosenberg Self-Esteem Scale; the State-Trait Anxiety Inventory – trait version, and the Ruminative Responses Scale.

The results echo the data from previous unpublished data collections, with the PES and UES demonstrating predicted patterns in their relationship with other measures. The correlations from the two scales of the REQ and related questionnaires are presented in Appendix S.

The correlational data are generally consistent with predicted relationships. As with the previously described data, the UES yielded more compelling correlations than the PES, which is again perhaps due to the fact that there is more variability in individuals' evaluation of their unpleasant emotions than their pleasant emotions, and because there are 12 items on the UES as compared with 6 items on the PES. Scores on the PES were significantly positively correlated with scores on the Rosenberg Self-Esteem Questionnaire, which measures an individual's self-esteem, the Trait Meta-Mood

Scale - clarity factor, which measures how clear individuals are about their emotional experiences, and the Emotion Regulation Questionnaire - reappraisal scale, which assesses tendency to use cognitive reappraisal as a coping mechanism. Scores on the PES were negatively correlated with scores on the State-Trait Anxiety Inventory - trait version, which is a measure of general anxiety level, and the Emotion Regulation Questionnaire - suppression scale, which assesses tendency to suppress or inhibit emotional expression. While there were significant correlations among scores on the PES and those on related questionnaires, the relationships were generally not strong and exploring the exclusion of the PES from the REQ might be appropriate.

Scores on the UES correlated in predicted patterns with scores on related questionnaires, and the data also are consistent with data from prior questionnaire administrations. Scores on the UES were significantly positively correlated with scores on the Trait Meta-Mood Scale - clarity factor and the Rosenberg Self-Esteem scale. UES scores were negatively correlated with scores on the State-Trait Anxiety Inventory - trait version, and the Ruminative Responses Scale, which is a measure of tendency to ruminate. Scores on the UES were positively correlated with scores on four scales on the LESS: expression, which measures likelihood of being emotionally expressive; control, which measures how much people feel they have control over their emotions; acceptance of feelings, which assesses how much an individual is accepting of his or her emotions; and comprehensibility, which measures degree of understanding about emotional experiences. Scores on the UES were negatively related to scores on two LESS

subscales: guilt, which measures degree of guilty feelings stemming from emotions; and rumination, which measures tendency to ruminate over emotional experiences.

Examination of Variables from Study Sessions

As described previously, a subset of individuals who completed the battery of online questionnaires attended an in-person study session. In order to explore whether any self-selection factors were operating in terms of those students who completed the in-person session and those who did not, all variables collected during the online session were examined for differences between these two groups. Participants who attended a session differed significantly from those who did not attend a session on the Trait Meta-Mood Scale – clarity factor [$F(1,199) = 4.16$, $p = .04$]. The mean score on the clarity factor for individuals who did not attend a session was 40.94 with a standard deviation of 8.28, while the mean score for individuals who did attend a session was 38.64 with a standard deviation of 7.25. Therefore, individuals who did not attend a study session reported being more clear about their emotional experiences than individuals who did attend a session.

Analysis of Emotional Arousal

Physiological measurements.

To facilitate the analysis of the physiological data across time, the median heart rate, skin conductance, and skin temperature were calculated for each phase of the study session. Medians as opposed to means were used because this measure of central tendency reflected variations in the data but were not as strongly affected by extremely high scores as were the means.

Participants' heart rate, skin conductance, and skin temperature were measured at 30 second intervals throughout the course of the study session. While the physiological responding during 14 distinct phases was collected for each participant, the interest of the study was only in particular phases that were related to the study hypotheses. These were the baseline, RAT feedback (at which point the arousal was expected to peak), writing 1, sitting 1, writing 2, and sitting 2 phases. Differences between individuals in reduction of arousal (towards baseline levels) were expected to emerge across the latter four phases.

Frequency analyses and scatter plots of each physiological measurement at each session phase were examined to check for evidence of nonlinearity of relationships and the presence of outliers. There was no evidence that the physiological measurements and REQ subscales were related in a curvilinear manner. These analyses yielded the presence of an outlier for heart rate at the RAT feedback phase. A median heart rate of 965.69 created spuriously high group means for the RAT feedback phase, and therefore this heart rate measurement was omitted from further analyses. The descriptive data for the medians of the three physiological variables at each of these six phases are presented in Appendix T.

In order to examine whether the manipulation functioned as intended, the measurements between the baseline and RAT feedback phases were compared for each of the three physiological variables. Repeated measures analyses indicated that skin conductance levels at baseline and the RAT feedback phases were significantly different [$F(1) = 95.36$; $p < .001$]. Skin temperature levels at the baseline and RAT feedback phases were also significantly different [$F(1) = 7.56$; $p = .008$], but not in the expected

direction. Skin temperature increased significantly between baseline and RAT feedback, while a decrease in skin temperature was expected. Of note, however, is that while some studies suggest a decrease in skin temperature indicates increased arousal, other studies suggest that the direction of skin temperature variation is emotion-dependent (Levenson, Ekman & Friesen, 1990; Stemmler, 1989). Specifically, anger and fear result in warming and cooling of the hands, respectively, suggesting that perhaps the mood induction led participants to feel relatively angry as opposed to fearful. Heart rate measurements at the baseline and RAT feedback phases were not significantly different [$F(1) = 1.14$; $p = .29$]. Therefore, the results involving skin conductance suggest that the negative mood induction did produce the expected increase in physiological arousal. It is worth noting (see Appendix BB) that heart rate does appear to spike during the RAT feedback phase for some participants; but heart rate was extremely variable, within as well as across subjects, and this may account for the lack of statistical significance. The correlations between the physiological measurements are presented in Appendix U.

It was expected that physiological measurements of the same type but measured at different points would be significantly correlated. In other words, all heart rate measurements were expected to be correlated with one another, all skin conductance measurements were expected to be correlated with each other, and all skin temperature measurements were expected to be correlated with each other. Skin conductance and skin temperature followed this pattern. The skin conductance measurements at each phase were significantly correlated with one another, as were the skin temperature measurements. Skin conductance in particular appears to be a relatively stable

measurement, as the correlations between skin conductance measurements at the various phases were at least .81.

Self-report of mood.

In addition to physiological monitoring, level of arousal was assessed by self-report. Participants completed the PANAS four times throughout the course of the session to allow for an evaluation of self-report mood across time. The four PANAS administrations took place at baseline, following the powerpoint presentation (which in turn was after the negative mood induction), following the first sitting phase, and following the second sitting phase. The PANAS results in two scales: the Positive Affect Scale (PA) and the Negative Affect Scale (NA). Completing the PANAS four times during the session yielded eight PANAS scores: PA 1, NA 1, PA 2, NA 2, PA 3, NA 3, PA 4, and NA 4. Coefficient alphas were calculated to address each subscale's reliability, and the results are depicted in Appendix V. The reliability analysis indicated that the PANAS scores were stable. Descriptive data for the eight PANAS subscales are presented in Appendix W.

As with the physio data, a repeated measures analysis of the self-report measures of mood at baseline and after the RAT feedback served to examine whether the manipulation functioned as intended. It was expected that during and shortly following the RAT and the RAT feedback phases, reported positive affect would decrease and reported negative affect would increase. Positive affect decreased significantly between the first and second PANAS administrations [$F(1) = 30.52$; $p < .001$] while negative

affect increased significantly [$F(1) = 13.02$; $p < .001$]. Thus, the changes in positive and negative affect supported the effectiveness of the failure manipulation.

The correlations between scores on the positive affect scale and the negative affect scale of the PANAS are presented in Appendix X. In addition, correlations were computed between scores from the four administrations of the PANAS and each of the physiological measures during each of the six session phases. Results are presented in Appendix Y. The majority of the correlations between physiological measurements and self-report measures of mood were not significant, as is often reported (Coventry & Hudson, 2001; Wofford, 2001).

Correlations of the REQ subscale scores with the physiological variables and PANAS subscales are presented in Appendix Z. There was only one significant correlation, which was between scores on the negative affect subscale administered after the powerpoint presentation and scores on the UES.

Analysis of individuals grouped by REQ score.

The first primary hypothesis addressed the ability of the REQ subscale scores to predict recovery from a negative mood induction. Specifically, individuals with a high (more accepting) REQ score were expected to exhibit a relatively fast return to baseline levels of physiological arousal and self-report mood. In addition, the second primary hypothesis explored the REQ's ability to predict level of cognitive arousal, proposing that individuals with a relatively accepting emotional evaluation would exhibit less rumination following a distressing event. In order to facilitate the interpretation and graphic depiction of the data between groups, a between subjects factor was formed by

creating high, medium, and low groups on each of the REQ subscales. Cut-scores were computed for both the PES and the UES to yield three, roughly equal-sized groups for each subscale. The cut-scores were 25 and 27 for the PES, resulting in 26 participants in the low-PES group (i.e. those with a negative evaluation of themselves when experiencing pleasant emotions), 24 participants in the medium-PES group (i.e. those with a relatively moderate view of themselves when experiencing pleasant emotions), and 19 in the high-PES group (i.e. those with a positive evaluation of themselves when experiencing pleasant emotions). For the UES, the cut-scores were 29 and 34, yielding 27 participants in the low-UES group (i.e. those with a negative evaluation of themselves when experiencing unpleasant emotions), 22 in the medium-UES group (i.e. those with a relatively moderate view of themselves when experiencing unpleasant emotions), and 20 in the high-UES group (i.e. those with a positive evaluation of themselves when experiencing unpleasant emotions). These between subjects factors were included in the analysis of the physiological and self-report data.

While the division of participants into three groups based on UES and PES score is somewhat less sensitive than treating UES and PES scores as continuous variables, this approach was preferred because it lends itself to easier interpretation. Along with including REQ in a categorical fashion, however, all analyses were also computed using regression with REQ as a continuous variable. All of the patterns in physiological arousal and self-report mood remained consistent regardless of whether REQ score was included in a categorical or a continuous manner.

In order to assess physiological arousal across time, the general linear model was used to perform repeated measures analyses separately on each physiological measurement (heart rate, skin temperature, and skin conductance). The repeated measures factor in each of these analyses consisted of the physiological measurement at the six key phases (baseline, RAT feedback, writing 1, sitting 1, writing 2, and sitting 2), and the between subjects factor was the group based on PES and UES scores described above. So, in sum, each of these repeated measures analyses used either PES or UES group (high, medium, low) as a between subjects factor and time (baseline, RAT feedback, writing 1, sitting 1, writing 2, and sitting 2) as a within-subject factor. Dependent variables in each analysis were one of the three physiological measures.

In the following analyses the sphericity assumption was assessed using Mauchly's test of sphericity. The sphericity assumption was violated for all of the analyses of the physiological variables, and therefore the reported values have been adjusted using the Greenhouse-Geisser adjustment.

Finally, specific a priori contrasts were calculated for each physiological measurement to explore hypothesized interactions between group and time. The difference between the baseline and sitting one phases for participants with high versus low UES and PES scores was explored in one a priori contrast. In a second a priori contrast, the difference between the baseline and sitting two phases for participants with high versus low UES and PES scores was tested.

In the analysis of heart rate that used PES group as a factor, there was no significant main effect across time [$F(3.21) = .62$, $p = .61$] and no significant main effect

for PES group [$F(2) = 1.52$; $p = .23$]. In addition, there was no significant interaction between time and group [$F(6.42) = .60$, $p = .75$]. See Appendix AA. The a priori tests indicated there was no significant difference in the change in heart rate of participants with high and low PES score between the baseline and first sitting phases ($p = .22$) or between the baseline and second sitting phases ($p = .60$).

Similarly, in the analysis of heart rate that used UES group as a factor, there was no significant main effect across time [$F(3.34) = .62$, $p = .62$] and no significant main effect for UES group [$F(2) = .03$, $p = .97$]. There was, however, a significant interaction between time and group [$F(6.67) = 2.19$; $p = .04$]. See Appendix BB. This interaction appears to be primarily attributed to the fact that the heart rate of participants in the medium and low UES groups changed in opposite directions during the study session. The a priori tests indicated there was no significant difference in the change in heart rate of participants with high and low UES score between the baseline and first sitting phases ($p = .87$) or between the baseline and second sitting phases ($p = .73$).

In the analysis of skin temperature that used PES group as a factor, there was no significant main effect across time [$F(2.19) = 1.73$, $p = .18$] and no significant main effect for PES group [$F(2) = .70$, $p = .50$]. There was no interaction between time and group [$F(4.38) = .63$; $p = .65$]. See Appendix CC. The a priori tests indicated there was no significant difference in the change in skin temperature of participants with high and low PES score between the baseline and first sitting phases ($p = .27$) or between the baseline and second sitting phases ($p = .44$).

In the analysis of skin temperature that used UES group as a factor, there was also no significant main effect across time [$F(2.21) = 1.50$, $p = .23$] and no significant main effect for UES group [$F(2) = .31$; $p = .74$]. There was no significant interaction between group and time [$F(4.41) = .38$; $p = .84$]. See Appendix DD. The a priori tests indicated there was no significant difference in the change in skin temperature of participants with high and low UES score between the baseline and first sitting phases ($p = .72$) or between the baseline and second sitting phases ($p = .43$).

In the analysis of skin conductance that used PES group as a factor, there was a significant main effect across time [$F(1.38) = 54.13$, $p < .001$]. See Appendix EE. There was no significant main effect of PES group in this analysis [$F(2) = .11$; $p = .90$]. There was also no significant interaction between time and PES group [$F(2.76) = .70$, $p = .55$]. The a priori tests indicated there was no significant difference in the change in skin conductance of participants with high and low PES score between the baseline and first sitting phases ($p = .48$) or between the baseline and second sitting phases ($p = .74$).

In the analysis of skin conductance that used UES group as a factor, there was also a significant main effect across time [$F(1.37) = 54.91$, $p < .001$]. See Appendix FF. There was no significant main effect of UES group in this analysis [$F(2) = .95$; $p = .39$]. There was also no significant interaction between time and UES group [$F(2.74) = .39$, $p = .75$]. Furthermore, the a priori tests indicated there was no significant difference in the change in skin conductance of participants with high and low UES score between the baseline and first sitting phases ($p = .72$) or between the baseline and second sitting phases ($p = .96$).

In addition to the physiological variables, the general linear model was used to perform repeated measures analyses separately on each self-report measure of mood. The repeated measures factor in each of these analyses consisted of the positive affect (PA) subscale and the negative affect (NA) subscale from the four administrations of the PANAS, which occurred at baseline, following the powerpoint presentation, following sitting 1, and following sitting 2. The between subjects factors formed by creating high, medium, and low groups on each of the REQ subscales was used in the mood self-report analyses. Thus, each of these repeated measures analyses used either PES or UES group (high, medium, low) as a between subjects factor and PANAS administration as a within-subject factor. Dependent variables in each analysis were either the PA subscale or the NA subscale of the PANAS.

As in the analyses of physiological variables, in the following analyses of self-report mood the sphericity assumption was assessed using Mauchly's test of sphericity. The sphericity assumption was violated for all of the analyses of the self-report variables, and therefore the reported values have been adjusted using the Greenhouse-Geisser adjustment.

In addition, a priori contrasts were calculated for self-reported positive affect and negative affect to explore hypothesized interactions between group and time. The priori contrasts explored the difference between self-reported mood at PANAS administration one and PANAS administration three for participants with high versus low UES and PES scores.

In the analysis of positive affect that used PES group as a factor, there was a significant main effect across time [$F(1.95) = 64.42$, $p < .001$]. See Appendix GG. There was no main effect of PES group in this analysis [$F(2) = 1.60$; $p = .21$]. In addition, there was no interaction between PES group and time [$F(3.90) = .87$, $p = .48$]. A priori tests indicated there was no significant difference in the change in reported positive affect at the first and third PANAS administrations between individuals in the high and low PES groups ($p = .16$).

In the analysis of positive affect that used UES group as a factor, there was a significant main effect across time [$F(1.96) = 62.29$, $p < .001$]. See Appendix HH. There was no main effect of UES group [$F(2) = 1.64$; $p = .20$] and no significant interaction between group and time [$F(3.93) = .43$, $p = .79$]. In addition, a priori test indicated there was no significant difference in the change in reported positive affect at PANAS administrations one and three between participants with high and low UES score ($p = .91$).

Results for reported negative affect across time were similar to those for reported positive affect. In the analyses of negative affect with PES as a factor, there was a main effect across time [$F(2.37) = 7.83$, $p < .001$]. See Appendix II. There was no main effect for PES group in this analysis [$F(2) = 1.28$; $p = .29$] and there was no significant interaction between group and time [$F(4.75) = .36$, $p = .87$]. A priori tests indicated there was no significant difference in the change in reported negative affect at the first and third PANAS administrations between participants in the high and low PES groups ($p = .76$).

There was a main affect across time in the analysis of negative affect with UES as a factor [$F(2.34) = 7.32$, $p < .001$]. See Appendix JJ. There was no main effect for UES group [$F(2) = .71$; $p = .49$] and there was no significant interaction between group and time [$F(4.68) = 1.03$, $p = .40$]. Again, a priori test indicated there was no significant difference in the change in reported negative affect at PANAS administrations one and three between participants with high and low UES score ($p = .23$).

Analysis of Cognitive Priming

In addition to emotional arousal, cognitive priming, or rumination, was assessed during the study session by measuring participants' reaction time in recognizing words related to the RAT task and to failure, as compared to neutral control words.

The rumination assessment task consisted of 40 words appearing on a computer screen, with asterisks in place of some of the letters. Participants were asked to hit a spacebar when they recognized a word that was either related to the RAT (negative mood induction task) or that was neutral. In addition, they were asked to say the word as they hit the spacebar to ensure response accuracy, and the response word was recorded by the examiner. There were 20 stimulus words in each category.

A "correct" response for a RAT-related stimulus word was any response word related to the negative mood induction task, while a "correct" response for a control stimulus word was the intended response word that was not related to the negative mood induction task. At times, a participant's verbal response to a RAT-related stimulus word was a variation of the stimulus word, and in those cases the response word was considered to be a correct response. For example, the word "confusing" given in

response to the RAT-related stimulus word "confusion" was categorized as a correct response. In a few instances, participants verbally responded to a control stimulus word with a word that was RAT-related. For example, the stimulus word "digital" was considered to be neutral, but a response of "difficult" was deemed RAT-related. Words such as the example response of "difficult" (RAT-related words given in response to a control stimulus word) were included in the analyses as being a correct RAT-related word. The decision to categorize words as being RAT-related or neutral was made by independent agreement among two researchers with a third researcher serving as a tie-breaker. A list of initially incorrect words and their agreed-upon categorization is included in Appendix KK.

The mean and standard deviation for the median response times and for the number of correct response words for both RAT-related and control words are presented in Appendix LL. There is a significant correlation between response time for RAT-related and control words ($r = .83$, $p < .01$). In addition, there is a significant correlation between number of correct words for both RAT-related and control stimulus words ($r = .37$; $p < .01$). These results suggest participants' speed and accuracy of responding to words was somewhat stable across both RAT-related and control words.

Cognitive priming across REQ groups.

In order to assess whether response time to neutral and RAT-related words was significantly different, the general linear model was used to perform repeated measures analyses on the two response task variables (median time to recognize RAT-related words and median time to recognize neutral words). The repeated measures factor in

each of these analyses consisted of the two response time medians, and the between subjects factor was the group based on PES and UES scores used with the physiological and mood self-report data. So, in sum, each of these repeated measures analyses used either PES or UES group (high, medium, low) as a between subjects factor and median response time to RAT-related and neutral words as a within-subject factor. Dependent variables in each analysis were the two response time medians.

As in the analyses of physiological and self-report arousal, the analyses of cognitive priming were also computed using regression with scores on the REQ subscales as continuous variables. All of the patterns in cognitive priming remained consistent regardless of whether REQ score was included in a categorical or continuous manner.

In addition, specific a priori contrasts were calculated for the word response task variables to explore hypothesized interactions between group and time. The difference in median response times to neutral and RAT-related words for participants with high versus low UES and PES scores was explored in the a priori contrasts.

In the analysis of median response time with PES as a factor, there is a main effect of response time [$F(1) = 19.68$; $p < .001$]. See Appendix MM. Participants responded significantly more quickly to RAT-related words than they did neutral words. There is no main effect of PES group [$F(2) = 1.44$; $p = .25$], and there is no significant interaction between group and response time [$F(2) = 1.81$; $p = .17$]. A priori contrasts indicated that high and low PES individuals did not differ in the discrepancy between median response time to neutral and RAT-related words ($p = .06$).

The analysis of median response time with UES as a factor indicates there is a main effect of response time [$F(1) = 18.38$; $p < .001$]. See Appendix NN. Again, participants responded significantly quicker to RAT-related words than they did neutral words. There is no main effect of UES group [$F(2) = 1.05$; $p = .36$]. There is a significant interaction between UES group and response time [$F(2) = 4.10$; $p = .02$]. A priori contrasts indicated that high and low UES individuals did not differ in the discrepancy between median response time to neutral and RAT-related words ($p = .81$). However, low and medium UES individuals did differ in the discrepancy between median response time to neutral and RAT-related words ($p = .02$), as did medium and high UES individuals ($p = .01$).

Analysis of Secondary Hypotheses

Secondary hypotheses explored the relationship between emotional evaluation, attachment style, and emotion inhibition in an effort to more fully understand the potential influence of attachment style on the development of either an accepting or a judgmental emotional evaluation style. The four attachment styles can be conceptualized as a reflection of the tendency to view the self and others either positively or negatively. These self and other views were in turn proposed to be related to an individual's tendency to have an accepting emotional evaluation and to be emotionally expressive. Specifically, the view of self was thought to manifest itself in emotional evaluation style, as individuals who are self-critical or negative towards themselves in general might tend to be more judgmental of their emotional experiences. In addition, the view of other was thought to manifest itself in emotional expressivity, as individuals who view others as

responsive and supportive might be more likely to express their emotions as opposed to individuals who view others as unresponsive and unsupportive. The proposed relationships between attachment style, emotional inhibition, and emotional evaluation are presented in Appendix B.

While the secondary hypotheses serve to shed light on attachment style as a possible influence on the development of emotion regulation styles, they also serve to potentially further the REQ's validity. The questionnaires used to assess attachment style and emotion inhibition (the Relationship Scales Questionnaire and the suppression scale of the Emotion Regulation Questionnaire, respectively) have solid psychometric properties and are used widely in the literature (Griffin & Bartholomew, 1994b; Gross & John, 2003; John & Gross, 2004; Koole & Jostmann, 2004; Sherry, Lyddon, & Henson, in press; Vuorela & Nummenmaa, 2004; Waskowic & Chartier, 2003). Results that support the proposed relationships depicted in Appendix B would provide further construct validation for the REQ by suggesting that the questionnaire is a valid and adequate measure of emotional evaluation.

Canonical Correlation Analysis

A canonical correlation analysis (CCA) was conducted to evaluate the multivariate shared relationship between the two variable sets (i.e. adult attachment and emotion regulation). There are general advantages to including this method in an examination of relationships between constructs. First, CCA is at heart a Pearson's *r* correlation between a synthetic predictor and a synthetic criterion variable, which are created by applying a linear equation to the observed predictor variables and also to the

observed criterion variables (Sherry & Henson, 2005). The current study includes four attachment variables as predictors and three emotion variables as dependent variables, and CCA is able to look at all of these variables together, both in terms of what variables are correlated as well as in terms of shared correlations among each of them. Furthermore, CCA only performs one statistical analysis between numerous variables, which decreases the probability of committing a Type I error.

In the CCA the four attachment variables from the RSQ were used as predictors of the three emotion regulation variables, which were the UES and PES subscales of the REQ and the suppression subscale of the ERQ. The analysis yielded three functions with squared canonical correlations (R_c) of .34, .07, and .03 for each successive function. Collectively, the full model across all functions was statistically significant using the Wilks' $\lambda = .60$ criterion, F (12, 508.28) = 8.98, $p<.001$. Because Wilks' λ represents the variance unexplained by the model, (1-λ) yields the full model effect size in an r^2 metric. Thus, for the set of three canonical functions, the r^2 type effect size was .40, which indicates that the full model can explain a substantial portion, about 40%, of the variance shared between the variable sets.

The dimension reduction analysis allows the researcher to test the hierarchical arrangement of functions for statistical significance. As noted, the full model (functions 1-3) was statistically significant. Function 2-3 was also statistically significant, F(6, 326) = 3.21, p=.004. The r^2 type effect size, however, was .09, indicating that function 2-3 only explained 9.3% of the variance between the variable sets. Therefore, while function 2-3 is statistically significant it is not clinically significant and was not included in further

analyses. Function 3 (which is the only function that is tested in isolation) did not explain a statistically significant amount of shared variance between the variable sets, $F(2, 194) = 2.60$, p=.08, nor a clinically significant amount of shared variance, with an effect size of .03. Thus, function 3 was not interpretable and was excluded from further analysis. Therefore, given the Wilks' λ significance values and the r^2 effects for each function, only the first function is considered noteworthy in the context of the current study and was included in further analyses.

Appendix OO presents the standardized canonical function coefficients and structure coefficients for function 1. Looking at the function 1 coefficients, we see that the UES and suppression subscale are relevant criterion and the PES is not. The UES and suppression subscale accounted for significant percentages of the variance, 53.1% and 59.6% respectively, while the PES did not account for a significant percent. The UES and suppression subscale have opposite signs, indicating they are negatively related – as individuals feel more positively about themselves when experiencing unpleasant emotions they are less likely to inhibit expression of their emotions, which is theoretically consistent.

Regarding the predictor variable set in function 1, secure and fearful attachment variables are the primary contributors to the predictor synthetic variable, accounting for 92% and 54.2% of the variance, respectively. The dismissing and preoccupied attachment variables contributed to the predictor synthetic variable to a lesser degree than the secure and fearful attachment styles, accounting for 15.5% and 9.6% of the variance, respectively. The secure attachment variable has a negative sign while the dismissing,

fearful, and preoccupied variables have positive signs. This result suggests a secure attachment style is negatively related to the other three attachment styles, which is consistent with attachment theory and the aims of the RSQ scale.

First-Order Correlations

To determine whether the theoretically based predictions of differential relationships of emotion evaluation (UES and PES), and emotion expression (suppression subscale of ERQ), with the attachment variables (secure, fearful, preoccupied, and dismissing) were supported, first-order correlations were computed. The results are presented in Appendix PP. The correlations among the four attachment variables indicated that in general each attachment style was negatively correlated with the three other attachment styles. The relationship between fearful and dismissing, however, was an exception, with these two variables being significantly positively correlated. This correlation corroborates the data from Waskowic and Chartier (2003) in which fearful and dismissing attachment styles were positively correlated.

The PES was not significantly correlated with any of the attachment variables. The UES, however, did yield statistically significant results with three of the four attachment styles. Therefore, the UES but not the PES will be included in subsequent discussions of the correlations between scores on the REQ and the attachment variables.

The correlations shed light on the proposed relationships between the attachment, emotional evaluation, and emotion suppression variables as depicted in Appendix B. Each of the four attachment styles was thought to exhibit emotional evaluation and emotion expression patterns as suggested by their views of the self and other, which are

outlined based on the predominant attachment style. Appendix QQ shows the model from Appendix B along with the correlations from the matrix in Appendix PP that correspond to each hypothesized relationship. The correlations between attachment security, emotional inhibition, and emotion evaluation were as predicted and support the proposed model. Similarly, the correlations between degree of fearful attachment, emotional inhibition, and emotion evaluation were as predicted and support the proposed model.

The correlations of the dismissing and preoccupied attachment variables with the emotion regulation variables were not exactly as predicted. While attachment preoccupation was negatively related to emotional acceptance (UES) as expected, contrary to prediction, it was uncorrelated with suppression. Similarly, attachment dismissing style was positively related to emotional inhibition as expected, but was unrelated to emotional acceptance. While the pattern of correlation for preoccupied and dismissing attachment was not exactly as hypothesized, it is consistent with another reasonable conceptualization of the attachment styles. This alternate conceptualization asserts that the majority of the variation among individuals with varying levels of dismissing and preoccupied attachment styles is accounted for by the degree of negativity these individuals have towards others and the self, respectively. In other words, the level of dismissing attachment held by a dismissing individual is primarily determined by the degree of negativity towards others and not the degree of positivity towards the self. Therefore, an increase in dismissing attachment style would be associated with an increasingly negative view of others but not necessarily an increasingly positive view of

the self. This framework would account for the significant correlation between dismissing attachment and emotional inhibition as well as the non-significant correlation between dismissing attachment and emotional evaluation. This same principle could apply to preoccupied attachment style, with the level of attachment preoccupation being determined primarily by the degree of negativity towards the self and not by the degree of positivity towards others. Thus, an increase in preoccupied attachment would be accompanied by an increasingly negative view of the self but not necessarily an increasingly positive view of others. This conceptualization of attachment preoccupation accounts for the negative correlation between preoccupied attachment with emotional acceptance and the non-significant correlation of preoccupied attachment with emotional inhibition. Therefore, it can be argued that the pattern of correlations is actually very supportive of the proposed model.

CHAPTER FIVE

Discussion

The primary aim of the present study was to assess the REQ's ability to predict emotional and cognitive recovery following a distressing event. Specifically, it was thought that participants with an accepting emotional evaluation as measured by the REQ would exhibit a quicker return to baseline as compared with participants who were more judgmental of their emotional experiences.

Following the completion of an online battery of questionnaires, participants attended a study session during which their heart rate, skin conductance, skin temperature, and self-reported mood (as measured by the PANAS) were assessed over time. At the beginning of the study session, participants' baseline level of arousal and mood were established. Participants then engaged in a difficult word association task and were given false norms in an attempt to instill a sense of failure or disappointment. They then viewed a neutral powerpoint presentation for the purposes of another study. Two writing phases during which they wrote about their thoughts at that moment and two phases during which they sat quietly were intended to allow time for emotional processing so that individual differences in emotional processing could emerge. Finally, participants completed a word response task that assessed whether words related to the negative mood induction were still cognitively primed.

Summary and Discussion of Hypotheses

A major goal of the study was to explore the predictive ability of the REQ by assessing its utility in predicting levels of arousal, self-report mood, and degree of

cognitive priming following a distressing event. In addition, the study aimed to examine the relationship between the REQ and related questionnaires. Lastly, the study analyzed the relationship between emotional evaluation, emotion regulation, and attachment style.

Primary Hypotheses

Hypothesis one.

Hypothesis one proposed that following a negative mood induction, individuals with less emotional acceptance would exhibit a slower return to baseline as indicated by increased emotional arousal during the remainder of the study when compared to individuals with more emotional acceptance. Emotional arousal was measured by monitoring skin conductance, heart rate, and skin temperature, and by self-report of mood. The hypothesis was not supported, as the results indicated that participants with accepting or judgmental emotional evaluations did not differ in their level of emotional arousal during the remainder of the session following the negative mood induction. Also, regression analyses with the UES and PES scores as predictor variables and the physiological variables and the self-report subscales as criterion variables were not significant.

Hypothesis two.

Hypothesis two proposed that participants with more emotional acceptance would be less cognitively primed following the negative mood induction than participants with a more judgmental emotional evaluation, with cognitive priming being indicated by recognition response time to words related to the negative mood induction. Results did not support this hypothesis. Instead, participants with moderate UES scores performed as

high UES scorers had been expected to perform: these moderate-scoring participants exhibited relatively similar response times to RAT-related words and neutral words. It is not clear what might account for this unexpected pattern.

Hypothesis three.

Hypothesis three stated that the REQ would be moderately correlated with questionnaires assessing ideas related to emotional evaluation, including the accept without judgment scale of the Kentucky Inventory of Mindfulness Skills; the Trait Meta-Mood Scale – clarity factor; Emotion Regulation Questionnaire – suppression and reappraisal factors; the expression, guilt, rumination, acceptance of emotions, comprehensibility, and control subscales of the Leahy Emotional Schema Scale; the Rosenberg Self-Esteem Scale, the State-Trait Anxiety Inventory – trait version, and the Ruminative Responses Scale.

The results supported the hypothesis, suggesting that the REQ demonstrates good construct validity. First, note that the UES and the PES related only moderately to the Rosenberg Self-Esteem Scale across two administrations, indicating that responses on the REQ were not merely a reflection of self-esteem in a general sense. In addition, the UES was moderately correlated with the accept without judgment subscale of the Kentucky Inventory of Mindfulness Skills, which suggests that the UES and the accept without judgment subscale are measuring related but distinct ideas and are each a contribution to the literature. This same trend is noted in the relationship between the UES and the acceptance of emotions subscale of the LESS – the moderate correlation indicates that the

two subscales are assessing similar constructs but are not tapping completely overlapping ideas.

The negative correlation between scores on the UES and scores on the Ruminative Responses Scale and the rumination subscale of the LESS suggest that as individuals have a more accepting evaluation of unpleasant emotions they tend to ruminate less. This is theoretically consistent, as a positive evaluation is theorized to stop the downward spiral of negative affect that is associated with rumination. In addition, the results suggest that as individuals are more accepting of their unpleasant emotions they are more likely to be emotionally expressive, to have a sense of control over their emotions, and to understand their emotions. Also, having a positive evaluation of pleasant emotions is associated with the use of cognitive reappraisal as a coping mechanism. Perhaps reappraisal is associated with a positive evaluation because individuals reframe their emotions in an optimistic, constructive manner.

Both the UES and the PES were positively correlated with the clarity factor of the Trait Meta-Mood Scale, suggesting that a positive evaluation of both pleasant and unpleasant emotions is accompanied by a sense of clarity over emotional experiences.

Of note is the fact that scores on the PES yielded only two significant correlations with scores on related measures that were not also found with scores on the UES, and these correlations were not strong. Therefore, the utility of the PES is not as clear as the utility of the UES and exploring the exclusion of the PES from the REQ might be worthwhile.

Discussion of results of primary hypotheses.

There are several potential reasons for the fact that the REQ was not a significant predictor of cognitive and emotional arousal after failure feedback. First, it is possible that extraneous factors present during the writing and sitting phases influenced participants' emotional and cognitive processing during these times. For example, all participants were undergraduate students who were required to participate in the study for class credit. Many students appeared to have a negative attitude about the study from the outset as they seemed irritated and annoyed that participating in a study was required. Many participants also appeared dismayed that the study session was to last the entire hour and a half, as often studies conclude before the allotted time and some participants come to expect an early release. Also, the sessions were held in a room that is susceptible to outside noise, and frequently there was extraneous noise entering the room that could have been distracting to participants. Presumably, if the sessions were held under different circumstances, in a sound-proof room with participants who held no negative opinions about the session before it began, individual differences in cognitive and emotional processing stemming from emotional evaluation style might have emerged which the REQ might have been able to predict.

Another factor that might have contributed to the non-significant prediction results was the length of time between the negative mood induction and the conclusion of the study session. In the current study roughly an hour passed between the RAT feedback phase and the last physiological and self-report measurement. It is possible that if participants' physiological arousal and self-report mood were collected for a longer

period of time, individual differences in cognitive and emotional processing and arousal would emerge. The session length was determined in an effort to balance the need for emotional processing time with the recognition that participants were likely to become frustrated and bored during a very lengthy session, which could in turn negatively impact the study results. If the emotional processing time in the session could have been extended while at the same time not increasing participants' irritation levels, perhaps differences in emotional and cognitive processing and arousal might have emerged that the REQ could have predicted.

Another potentially negative factor in the current study is the fact that the investigator was attempting to induce a state of emotional distress that was substantial enough to trigger varying reactions yet was not unethical. It is possible that the negative mood induction was not "strong" enough to produce a judgmental response in those participants prone to be unaccepting of their emotional experiences. Perhaps variations in emotional evaluation would have emerged had participants been told that their RAT score was an indication of a more personally significant construct than problem-solving ability, such as IQ, but ethical concerns precluded that from being a viable option for the present study.

In addition, the mood induction may not have led to the type of emotional experience that people tend to judge or evaluate. The reported negative affect and skin conductance patterns suggest that the RAT was associated with an increase in negative affect and arousal, but that does not necessarily mean that participants were judgmental of the emotion associated with the negative affect and arousal. For instance, the

increased skin conductance and negative affect could have been a result of frustration, not disappointment or failure. Individuals might not be as prone to judge frustration as they would failure, which in turn means that REQ scores would not predict differences in arousal resulting from frustration. Moreover, if the increase in arousal and negative mood was related to a sense of failure, perhaps the fact that the failure occurred in an unnatural environment decreased the salience of the failure experience, allowing participants to experience different levels of emotional arousal than they would in their daily lives.

Secondary Hypotheses

The secondary hypotheses address the relationship between attachment style as measured by the RSQ, emotional evaluation style as measured by the REQ, and tendency to inhibit emotional expression as measured by the suppression subscale of the ERQ. A model was proposed that suggests that the self and other views as indicated by attachment style are associated with emotional evaluation and emotional inhibition. Presumably, individuals with a positive view of the self would have an accepting or positive stance towards their own emotions. However, a positive view of self might not lead inevitably to expression of emotions. Expression of emotions might be predicted better by the individual's view of others. If others are viewed as untrustworthy, for example, the individual might tend to curtail expression of their emotions (even if they held a positive view of these emotions). Thus, acceptance of one's emotions might be a reflection of a positive view towards the self in a general sense while emotional expressivity might be best explained as a reflection of the view of others as supportive and responsive. The

purpose of examining this model is twofold. It assesses attachment theory as an influence on the development of emotional evaluation style, as well as further validates the REQ as a measure of emotional evaluation if the proposed model is supported.

Hypothesis one.

Hypothesis one stated that since secure individuals have a positive view of self and others, a secure attachment style would be associated with an accepting emotional evaluation and a tendency to be emotionally expressive. The results support this hypothesis, with the first-order correlations suggesting that the secure attachment variable was positively correlated with the UES and negatively correlated with the suppression subscale of the ERQ.

Hypothesis two.

Hypothesis two stated that since dismissing individuals have a positive view of self and a negative view of others, a dismissing attachment style would be associated with an accepting emotional evaluation and a tendency to inhibit emotions. The results supported the theorized relationship between dismissing attachment and emotion inhibition. There was not, however, a significant relationship between the dismissing attachment variable and the UES. As individuals have a stronger dismissing attachment they do not tend to have a positive emotional evaluation, as was expected, but they also do not tend to have a judgmental emotional evaluation.

Hypothesis three.

Hypothesis three stated that since preoccupied individuals have a negative view of self and a positive view of others, a preoccupied attachment style would be associated

with a judgmental emotional evaluation and a tendency to be emotionally expressive. The results suggested that as individuals have a stronger preoccupied attachment they are more likely to be judgmental towards their emotions, which supports the proposed model. The results suggested that preoccupied attachment is not associated with a tendency to express or inhibit emotions.

Hypothesis four.

Hypothesis four stated that since fearful individuals have a negative view of self and others, a fearful attachment style would be associated with a judgmental emotional evaluation and a tendency to inhibit emotional expression. The results supported these patterns, with the first-order correlations suggesting the fearful attachment variable was positively correlated with the suppression subscale of the ERQ but was negatively correlated with the UES.

Discussion of results of secondary hypotheses.

It was hypothesized that an increase in dismissing attachment style would be accompanied by an increase in emotional acceptance and an increase in preoccupied attachment style would be accompanied by an increase in emotional expressivity. While these results were not supported, further reflection on the nature of the positive view of the self and others held by individuals with predominantly dismissing and preoccupied individuals, respectively, suggests that perhaps the view of the self and other do not inherently become more positive as dismissing and preoccupied attachment style increases. In other words, as dismissing style increases, individuals may become more negative in their view of others but not more positive in their view of the self. As

preoccupied style increases, individuals may become more negative in their view of the self but not more positive in their view of others. With this conceptualization of preoccupied and dismissing attachment styles in mind, the significant as well as the non-significant results yielded by the first-order correlations support the proposed model between attachment style, emotion inhibition, and emotional evaluation. This outcome suggests that attachment style may be a useful conceptualization of the etiology of emotional evaluation and emotion inhibition. This finding has both empirical and clinical implications, as it suggests the REQ is an adequate measure of emotional evaluation as well as sheds light on what leads individuals to develop various emotion regulation styles.

Discussion of Correlations Involving Physiological Arousal

It was expected that an increase in self-report arousal would be accompanied by an increase in physiological arousal throughout the study session. In addition, it was expected that the three physiological measurements (skin temperature, skin conductance, and heart rate) would show similar patterns of arousal across the session phases. These expectations were informed by past research in which the three physiological measurements used in the present study served as indicators of stress (Barger, Kircher & Croyle, 1997; Boudewyns, 1976; Lanzetta, Cartwright-Smith & Kleck, 1976; Pennebaker & Chew, 1985; Rimm-Kaufman & Kagan, 1996; Svebak, Storfjell & Dalen, 1982). These predictions were not supported. In general, the physiological measurements were not significantly correlated with self-report measures of mood and there were few

significant correlations between the three types of physiological measurements across the session phases.

Other researchers have found similar results, with self-report data being uncorrelated with physiological measurements (Coventry & Hudson, 2001; Wofford, 2001) or with physiological measurements themselves being uncorrelated (Matthews, Jones & Chamberlain, 1990; Wofford, 2001). Perhaps this lack of corroboration within the physiological and self-report data is at least in part a result of physiological measurements' susceptibility to being influenced by uncontrolled, external factors, which can introduce extraneous variability into the data (Freeman, Horner & Reichle, 1999). Furthermore, arousal as a general construct may not be consistently assessed by all physiological measures, as, for example, the variation of skin conductance has been found to be emotion-dependent and therefore changes depending on the *type* of emotional arousal a person experiences (Levenson, Ekman & Friesen, 1990; Stemmler, 1989).

The fact that non-significant relationships and inconsistent patterns involving physiological measurements have been reported in past research suggests that perhaps physiological measurements are very sensitive markers of arousal. While significant prediction of physiological arousal by UES and PES scores would have been compelling validation evidence for the REQ, it appears that prediction of physiological arousal is a very stringent test to pass, given the apparent sensitivity and perhaps even instability of physiological arousal. Thus, perhaps the REQ's failure to predict physiological arousal is more a function of the nature of the physiological measurements than the ability of the REQ to effectively assess emotional evaluation.

Summary of Study Findings

While the REQ subscales were not significant predictors of emotional arousal or of cognitive priming, there is evidence in the current study that the REQ is a valid and reliable measure of emotional evaluation. First, the previously unpublished results along with the results from the current data collection suggest the REQ has good convergent and discriminant validity, as well as good test-retest reliability and internal consistency. In addition, the secondary hypotheses support the proposed model between attachment style, emotion inhibition, and emotional evaluation, furthering the construct validation of the REQ by suggesting it is in fact measuring judgment of core emotions. Lastly, the lack of significant prediction of emotional arousal or cognitive priming by the REQ might be a result of factors not related to the REQ's predictive ability, such as extraneous influences during the study session affecting participants' emotional and cognitive processing or the fact that physiological measurements appear to be extremely sensitive measures.

In sum, the results of the study strengthen the assertion that the REQ is a useful instrument in the assessment of naturally occurring emotional evaluation style. The findings of the present study along with the results of previous data collections yield validity and reliability information that can increase the confidence of clinicians and researchers that the REQ is an adequate and useful measure of individuals' tendency to be either accepting or judgmental of their emotional experiences.

Applications of the REQ

The REQ has potential use in both empirical and clinical arenas. The REQ can be of use in research that involves judgment of emotions, such as the investigations of meta-cognitions and secondary emotions (Lynch, Robins, Mores, and Krause, 2001; Papageorgiou and Wells, 1999, 2001; Wells and Carter, 1999, 2001). Many researchers have investigated the cognitive or emotional reactions to anxiety and depression, but the REQ can be used in the investigation of emotional judgment of other core emotions, such as fear or embarrassment. In addition, the REQ has utility in clinical settings in which emotional evaluation is of interest. Wells and Carter (1999) and Nassif (1999) found that a negative evaluation of worry was a strong predictor of pathological worry and generalized anxiety disorder. Assessing emotional evaluation with the REQ might help clinicians identify those individuals prone to a negative emotional evaluation in an attempt to prevent the development of mood-related disorders. Also, in treatment programs that promote an open awareness to one's emotions, such as Kabat-Zinn's stress reduction and relaxation program (Kabat-Zinn, Lipworth, & Burney, 1985), Linehan's dialectical behavior therapy (Linehan, 1987), and Hayes' acceptance and commitment therapy (Hayes, 2004), the REQ can be used as a baseline measure of emotional evaluation as well as an indicator of treatment progression.

Strengths

An important asset of the current study is that it assessed physiological arousal and cognitive priming objectively and not solely by subjective self-report. Since these two constructs were key dependent variables in the study, it was beneficial to gather

information regarding arousal and cognitive priming in a relatively direct fashion. The physiological measurements and the word recognition task were objective assessments, which decreased the likelihood of biases or demand characteristics influencing the results of emotional and cognitive arousal.

Another strength of the study is the utilization of a simulated "real-life" situation to induce a negative mood. The negative mood induction in the study suggested to participants that their natural problem-solving ability was below average, which could be very personal and potentially upsetting feedback to receive. Theoretically the emotions evoked by this negative feedback would be similar to those evoked by situations students might actually encounter, such as scoring below the class average on a test. While the negative mood induction took place in an unnatural setting which could have decreased the salience of the failure feedback, the RAT presumably elicited emotions similar to what participants might experience after receiving negative feedback in their everyday lives, which is preferred over less invasive, more detached mood inductions such as viewing a sad movie clip. Relatedly, the mood induction is standardized so that it minimizes idiosyncratic differences that would be brought in were subjects to use a personal recounting of a distressing experience as the mood manipulation.

In addition, a strength of the study is its analysis of REQ subscales both in a categorical and continuous manner. For theoretical reasons, UES and PES scores were analyzed as continuous variables to retain the richness of the data and to not lose statistical power by creating subgroups. For logistical reasons, UES and PES were analyzed as categorical variables though the creation of subgroups to allow for ease of

analysis and to facilitate a graphic depiction of participants' emotional and cognitive arousal. There are benefits to both a continuous and a categorical approach to the analyses, and the fact that both were included in the study strengthens the conclusions of the study by precluding the question of whether one statistical approach would have yielded results not found by the other approach.

Limitations

An important limitation of the current study is that the participants possess certain characteristics that decrease the generalizability of the results to the larger population. The mean age of all participants was 21.5 with a standard deviation of 1.99. Young adults attending a university often differ from other age groups on a number of dimensions, such as socio-economic status and level of education. An important distinction for the purposes of the current study, however, is how college-age adults differ from other individuals in terms of emotional evaluation style. Theoretically, acceptance of emotions would vary across the life-span, as individuals might become more or less judgmental of certain emotions as life circumstances and experiences change. Also, acceptance of emotions might vary across generations. For example, a 25-year-old man might be more accepting of his depressive feelings than his 85-year-old grandfather, as society is currently more accepting of depression in men than it had been throughout the grandfather's lifespan. Therefore, exploring emotional evaluation in a young subset of the population may not be representative of the population as a whole.

Another limitation is that many of the constructs in the study were assessed by self-report questionnaires either in paper-and-pencil format or by online administration.

These measures are subject to biases and demand characteristics associated with such methods.

A third limitation is the ability of the probe questions asked at the end of the sessions to adequately ascertain the participants' beliefs regarding the deceptive aspects of the study. Those participants whose responses to probe questions suggested they deduced the true nature behind the RAT and RAT feedback were excluded from the study. However, it is possible that the probe questions did not adequately assess understanding of the study methods by all participants. Different probe questions might have led to more participants being excluded from the study if the current wording of the questions was unclear or misleading to some individuals. While excluding more participants might have necessitated a larger number of total participants to yield the desired N for the statistical analyses, more significant results might have occurred if only data from those participants who truly were blind to the true nature of the methods were included in the analyses.

A fourth limitation is that the RAT may not have been an appropriate mood induction for an analysis of emotional evaluation. As described earlier, the RAT appears to have led to increased arousal and negative affect but that does not necessarily indicate the presence of an emotion that individuals tend to judge. While it is possible that the RAT induced a sense of failure it is also possible that the increased arousal and negative affect was a result of frustration, annoyance, or some other emotion that individuals may not be as likely to evaluate or second-guess.

A fifth limitation is the fact that the participants were participating because of a class requirement and often appeared irritated and displeased about the required participation. Potentially, participants' thoughts and emotions during the study were largely influence by their preconceived notions about the study session. As described previously, two important aspects of the study were emotional and cognitive processing about the mood induction, and therefore any external influences on the participants' emotional and cognitive state could have confounded the study results.

There are also limitations regarding the development of the word recognition task. Specifically, the process of categorizing words as either RAT-related or neutral as well as the process of determining the difficulty of each word could have been more formalized. The lists of RAT-related and neutral words were developed by the investigator creating a list of words she considered to be neutral and a list of words thought to be RAT-related with fellow researchers providing feedback. Word difficulty was determined by asking pilot subjects to rate the difficulty of two versions of each word, with each version consisting of a different combination of letters being replaced by asterisks. The version of each word that received the more moderate ratings, indicating it was neither too easy nor too difficult, was included in the final word list. Perhaps a more stringent piloting process to determine word categorization and word difficulty would have been beneficial. For example, pilot participants could have completed the RAT and then rated the words on the two lists as either RAT-related or neutral as well as the difficulty of the two versions of each word. In addition, including enough pilot participants to warrant statistical analyses of the ratings might have been beneficial, as in the current study the

word categorization and difficulty were determined by viewing data by hand and human error and bias could have influenced the inclusion of words on the word recognition task.

Areas for Future Research

As emotional evaluation is a relatively new topic in the literature, there are a number of exciting areas for future research. One area is the intersection of ethnicity, race, and culture with emotional evaluation. Presumably, individuals from different ethnicities and cultural backgrounds would differ in their emotional evaluation styles, as different cultures place value on various aspects of human behavior. For example, an individual from a collectivistic culture might feel negatively about him or herself when experiencing pride in a personal achievement, while an individual from a more individualistic culture might feel very positively about him or herself when feeling pride in a similar achievement. Future research on cultural differences in emotional evaluation with the REQ might include norming the REQ on various ethnic and cultural groups, as currently it has been administered primarily to individuals from the United States' culture. In addition, the REQ could be used to explore differences between groups in emotional evaluation. While there were participants from various racial and ethnic backgrounds in the current study, there was not enough representation from groups other than White/Caucasian to perform statistical analyses between groups. Administering the REQ to a sample with high representation from various racial and ethnic groups would be beneficial to analyze cultural differences in emotional evaluation.

Revising the current study to address the methodological concerns described above has great potential for exploring emotional evaluation by addressing the REQ's

predictive validity in a more salient manner. For instance, including volunteer participants and experimenting with the length of time between the mood induction and the termination of the physiological measurements and self-report mood might yield more compelling prediction results. Past research has shown that participants remain aroused up to twelve hours after a negative mood induction (Watkins, 2004). While measuring individuals' arousal over a two-day period would have been interesting and compelling research, logistical and ethical concerns precluded that from being a viable option for the current study. However, Watkins' findings suggest that increasing the length of time over which participants' arousal is monitored might yield more significant results and exploring this option is recommended. In addition, inducing moods other than failure is recommended as well, as perhaps other emotions are more likely to be judged in an experimental setting.

Future investigations of the predictive validity of the REQ might involve a more naturalistic approach as opposed to the experimental procedure used in the current study. For instance, following Wells' and Carter's (1999) and Nassif's (1999) assertion that meta-worry is a predictor of problematic anxiety and GAD, it would be interesting to investigate whether low scores on the REQ (indicating a negative emotional evaluation) could predict the development of difficulties related to mood. For example, a study could ask college students to complete the REQ and questionnaires such as the Beck Depression Inventory and the Beck Anxiety Inventory at two or more points in time. If low scores on the REQ predict an increase in anxiety or depression between time one and

time two, that result might indicate that the REQ is assessing reactions to emotions in a valid manner.

Another more naturalistic approach would be to look at individuals' ability to cope with a stressful event. Hayes (2004), Linehan (1987), and Kabat-Zinn (1994) all discuss an openness towards experiences and emotions as positive and beneficial, but perhaps the advantages of this open, non-judgmental stance are most observable after major stressors as opposed to relatively minor disappointments or failure experiences. One way to approach this idea empirically might be to ask individuals who recently experienced the death of a family member to complete the REQ along with measures of physical and emotional well-being at two or more points in time. Presumably, high scores on the REQ (indicating high emotional acceptance) would predict scores on the outcome measures reflecting relatively positive well-being and effective coping.

Lastly, future research might include exploring the possibility of omitting the Pleasant Emotions Scale from the REQ. The psychometric properties of the PES are weak, and while it correlates with related measures the results are not overly compelling. Replicating the previous administrations of the REQ including just the UES along with related measures would examine if the psychometric properties of the UES are stable when administered without the PES. If the psychometric properties of the UES weaken when administered in isolation, the inclusion of the PES might be necessary for stable and valid responding on the UES. If, however, the UES remains correlated with related measures and demonstrates adequate reliability and internal consistency when administered alone, omitting the PES from the REQ might be appropriate.

APPENDICES

Appendix A

Reactions to Emotions Questionnaire

1) People tend to feel sad when they have experienced loss or disappointment. Think of a recent situation in which you have felt SAD.

Think about how you TYPICALLY FEEL ABOUT YOURSELF when you are sad. Don't try to be logical about your ratings. Just go with your gut feeling.

As you feel sad, you see yourself as:

1	2	3	4	5
weak				strong

1	2	3	4	5
unlovable				lovable

1	2	3	4	5
confused				clear-headed

2) People often feel pride when receiving praise or positive attention from others. Think of a recent situation in which you have felt PRIDE.

Think about how you TYPICALLY FEEL ABOUT YOURSELF when you feel pride. Don't try to be logical about your ratings. Just go with your gut feeling.

As you feel pride, you see yourself as:

1	2	3	4	5
weak				strong

1	2	3	4	5
unlovable				lovable

1	2	3	4	5
confused				clear-headed

3) People often feel angry when they feel they have been treated unfairly or have been wronged in some way. Think of a recent situation in which you have felt ANGRY.

Think about how you TYPICALLY FEEL ABOUT YOURSELF when you are angry. Don't try to be logical about your ratings. Just go with your gut feeling.

As you feel angry, you see yourself as:

1 2 3 4 5
weak strong

1 2 3 4 5
unlovable lovable

1 2 3 4 5
confused clear-headed

4) People tend to feel embarrassed when they perceive that they have appeared foolish to others. Think of a recent situation in which you have felt EMBARRASSED.

Think about how you TYPICALLY FEEL ABOUT YOURSELF when you are embarrassed. Don't try to be logical about your ratings. Just go with your gut feeling.

As you feel embarrassed, you see yourself as:

1 2 3 4 5
weak strong

1 2 3 4 5
unlovable lovable

1 2 3 4 5
confused clear-headed

5) People sometimes feel anxious/fearful even in situations that are not exactly dangerous (e.g. fear may focus on heights, spiders, speeches, meeting new people, or possible dangers such as accidents or disease). Think of a recent situation in which you felt anxious/fearful, even though you were not really in danger.

Think about how you TYPICALLY FEEL ABOUT YOURSELF when you are anxious/ fearful. Don't try to be logical about your ratings. Just go with your gut feeling.

As you feel anxious/fearful, you see yourself as

1 2 3 4 5
weak strong

1 2 3 4 5
unlovable lovable

1 2 3 4 5
confused clear-headed

:

6) People often feel excited when anticipating or expecting something positive. Think of a recent situation in which you have felt EXCITED.

Think about how you TYPICALLY FEEL ABOUT YOURSELF when you are excited. Don't try to be logical about your ratings. Just go with your gut feeling.

As you feel excited, you see yourself as:

1 2 3 4 5
weak strong

1 2 3 4 5
unlovable lovable

1 2 3 4 5
confused clear-headed

Appendix B

Proposed Model Between Attachment Style, Emotional Evaluation, and Emotional Inhibition

		View of Other (reflected in emotion inhibition vs. expression)	
		Positive	Negative
View of Self (reflected in emotional evaluation)	Positive	**SECURE** Do not inhibit emotions Positive emotional evaluation	**DISMISSING** Do inhibit emotions Positive emotional evaluation
	Negative	**PREOCCUPIED** Do no inhibit emotions Negative emotional evaluation	**FEARFUL** Do inhibit emotions Negative emotional evaluation

Appendix C

Factor loadings for the Reactions to Emotions Questionnaire

Emotion	Factor 1	Factor 2
Sad		
Weak/Strong	**.59**	.11
Unlovable/Lovable	**.56**	.16
Confused/Clear-headed	**.63**	.03
Proud		
Weak/Strong	-.04	**.64**
Unlovable/Lovable	.04	**.57**
Confused/Clear-headed	.09	**.64**
Angry		
Weak/Strong	.33	.23
Unlovable/Lovable	**.54**	.10
Confused/Clear-headed	**.41**	.14
Embarrassed		
Weak/Strong	**.71**	.00
Unlovable/Lovable	**.70**	.06
Confused/Clear-headed	**.62**	-.00
Anxious		
Weak/Strong	**.64**	.02
Unlovable/Lovable	**.60**	.17
Confused/Clear-headed	**.61**	.02
Excited		
Weak/Strong	.10	**.66**
Unlovable/Lovable	.13	**.67**
Confused/Clear-headed	.14	**.55**

Factor loadings greater to or equal to 0.4 are bolded.

Appendix D

Correlation Table of the Unpleasant Emotion Scale, the Pleasant Emotion Scale, and Related Questionnaires from Two Administrations (N=202 and N=345, respectively)

	UES		PES	
	Sample 1	Sample	Sample 1	Sample 2
Rosenberg Self-Esteem Scale		**.38**		**.29**
Self-Acceptance Scale	**.47**	**.45**	**.28**	**.23**
Trait Meta-Mood Scale (clarity factor)	**.43**	**.29**	**.27**	**.16**
Relationship Scales Questionnaire				
Secure Attachment	**.30**	**.39**	**.21**	**.25**
Fearful Attachment	**-.20**	*-.14*	-.12	*-.14*
Dismissing Attachment	*.15*	.05	*.18*	-.00
Preoccupied Attachment	**-.29**	**-.16**	**-.22**	.00
White Bear Suppression Inventory	**-.38**	**-.35**	*-.15*	-.07
Ruminative Responses Scale	**-.28**	**-.34**	**-.25**	.03
Stanton Emotional Approach Scale				
Emotional Processing Factor	.10	**.15**	.05	**.22**
Emotional Expression Factor	**.20**	.09	*.16*	**.20**
Big Five Inventory				
Conscientiousness Scale	*.16*	*.14*	**.20**	**.30**
Openness Scale	.14	*.12*	**.**13	**.24**
Neuroticism Scale	**-.51**	**-.36**	*-.17*	**-.17**
Agreeableness Scale	.03	.04	.13	**.27**
Extroversion Scale	**.34**	**.19**	*.17*	**.32**
Beck Depression Inventory	**-.34**	**-.26**	**-.32**	**-.15**
Inventory to Diagnose Depression – Lifetime	**-.21**		*-.16*	

correlations statistically significant at the .01 level are in bold; those significant at the .05 level are in italics

Appendix E

Reliability Analysis for Online Questionnaires and Subscales

Scale	Coefficient alpha
Reactions to Emotions Questionnaire	
unpleasant emotions scale	.80
pleasant emotions scale	.76
Kentucky Inventory of Mindfulness Skills	
accept without judgment subscale	.91
Rosenberg Self-Esteem Scale	.91
Relationship Scales Questionnaire	
secure attachment	.41
dismissing attachment	.41
preoccupied attachment	.41
fearful attachment	.75
avoidant factor	.75
anxious factor	.82
Trait Meta-Mood Scale	
clarity factor	.89
Leahy Emotional Schema Scale	
expression subscale	.31
guilt subscale	.80
rumination subscale	.51
control subscale	.82
acceptance subscale	.73
comprehensibility subscale	.82
State-Trait Anxiety Inventory (trait version)	.91
Emotion Regulation Questionnaire	
suppression subscale	.73
reappraisal subscale	.87
Ruminative Responses Scale †	.89

note: † N = 34

Appendix F

Ruminative Responses Scale

People think and do many different things when they FEEL DEPRESSED.

Please read each of the items below and indicate whether you never, sometimes, often, or always think or do each one when you FEEL DOWN, SAD, OR DEPRESSED.

Please indicate what you generally do, not what you think you should do.

	Never	Sometimes	Often	Always
1. Think about how alone you feel	1	2	3	4
2. Think "I won't be able to do my job/work if I don't snap out of this"	1	2	3	4
3. Think about your feelings of fatigue and achiness	1	2	3	4
4. Think about how hard it is to concentrate	1	2	3	4
5. Think "What am I doing to deserve this?"	1	2	3	4
6. Think about how passive and unmotivated you feel	1	2	3	4
7. Analyze recent events to try to understand why you are depressed	1	2	3	4
8. Think about how you don't seem to feel anything anymore	1	2	3	4
9. Think "Why can't I get going"	1	2	3	4
10. Think "Why do I always react this way?"	1	2	3	4
11. Go away by yourself and think about why you feel this way	1	2	3	4
12. Write down what you are thinking and analyze it	1	2	3	4

	Never	Sometimes	Often	Always
13. Think about a recent situation wishing it had gone better	1	2	3	4
14. Think “I won’t be able to concentrate if I keep feeling this way”	1	2	3	4
15. Think “Why do I have problems other people don’t have?”	1	2	3	4
16. Think “Why can’t I handle things better?”	1	2	3	4
17. Think about how sad you feel	1	2	3	4
18. Think about all your shortcomings, failings, faults, and mistakes	1	2	3	4
19. Think about how you don't feel up to doing anything	1	2	3	4
20. Analyze your personality to try to understand why you are depressed	1	2	3	4
21. Go someplace alone to think about your feelings	1	2	3	4
22. Think about how angry you are with yourself	1	2	3	4

Appendix G

Emotion Regulation Questionnaire

People have different ways of experiencing and handling emotions. Using the following 7-point scale, please answer the following questions about yourself by indicating the extent of your agreement.

1) When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about.

Strongly disagree						Strongly agree
			Neutral			
1	2	3	4	5	6	7

2) I keep my emotions to myself.

Strongly disagree						Strongly agree
			Neutral			
1	2	3	4	5	6	7

3) When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about.

Strongly disagree						Strongly agree
			Neutral			
1	2	3	4	5	6	7

4) When I'm feeling positive emotions, I'm careful not to express them.

Strongly disagree						Strongly agree
			Neutral			
1	2	3	4	5	6	7

5) When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm.

Strongly disagree						Strongly agree
			Neutral			
1	2	3	4	5	6	7

6) I control my emotions by not expressing them.

Strongly disagree						Strongly agree
			Neutral			
1	2	3	4	5	6	7

7) When I want to feel more positive emotion, I change the way I'm thinking about the situation.

Strongly disagree						Strongly agree
			Neutral			
1	2	3	4	5	6	7

8) I control my emotions by changing the way I'm thinking about the situation I'm in.

Strongly disagree						Strongly agree
			Neutral			
1	2	3	4	5	6	7

9) When I'm feeling negative emotions, I'm careful not to express them.

Strongly disagree						Strongly agree
			Neutral			
1	2	3	4	5	6	7

10) When I want to feel less negative emotion, I change the way I'm thinking about the situation.

Strongly disagree						Strongly agree
			Neutral			
1	2	3	4	5	6	7

Appendix H

Relationship Scales Questionnaire

Please read each of the following statements and rate the extent to which you believe each statement best describes your feelings about close relationships.

	Not at all like me		Somewhat like me		Very much like me
1. I find it difficult to depend on other people.	1	2	3	4	5
2. It is very important to me to feel independent.	1	2	3	4	5
3. I find it easy to get emotionally close to others.	1	2	3	4	5
4. I want to merge completely with another person.	1	2	3	4	5
5. I worry that I will be hurt if I allow myself to become too close to others.	1	2	3	4	5
6. I am comfortable without close emotional relationships.	1	2	3	4	5
7. I am not sure that I can always depend on others to be there when I need them.	1	2	3	4	5
8. I want to be completely emotionally intimate with others.	1	2	3	4	5
9. I worry about being alone.	1	2	3	4	5
10. I am comfortable depending on other people.	1	2	3	4	5
11. I often worry that romantic partners don't really love me.	1	2	3	4	5
12. I find it difficult to trust others completely.	1	2	3	4	5
13. I worry about others getting too close to me.	1	2	3	4	5
14. I want emotionally close relationships.	1	2	3	4	5

	Not at all like me		Somewhat like me		Very much like me
15. I am comfortable having other people depend on me.	1	2	3	4	5
16. I worry that others don't value me as much as I value them.	1	2	3	4	5
17. People are never there when you need them.	1	2	3	4	5
18. My desire to merge completely sometimes scares people away.	1	2	3	4	5
19. It is very important to me to feel self-sufficient.	1	2	3	4	5
20. I am nervous when anyone gets too close to me.	1	2	3	4	5
21. I often worry that romantic partners won't want to stay with me.	1	2	3	4	5
22. I prefer not to have other people depend on me.	1	2	3	4	5
23. I worry about being abandoned.	1	2	3	4	5
24. I am somewhat uncomfortable being close to others.	1	2	3	4	5
25. I find that others are reluctant to get as close as I would like.	1	2	3	4	5
26. I prefer not to depend on others.	1	2	3	4	5
27. I know that others will be there when I need them.	1	2	3	4	5
28. I worry about having others not accept me.	1	2	3	4	5
29. Romantic partners often want me to be closer than I feel comfortable being.	1	2	3	4	5
30. I find it relatively easy to get close to others.	1	2	3	4	5

Appendix I

Beck Inventory

On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling the PAST WEEK, INCLUDING TODAY! Circle the number beside the statement you picked. If several statements in the group seem to apply equally well, circle each one. Be sure to read all the statements in each group before making your choice.

1. 0 I do not feel sad.
   1 I feel sad.
   2 I am sad all the time and I can't snap out of it.
   3 I am so sad or unhappy that I can't stand it.

2. 0 I am not particularly discouraged about the future.
   1 I feel discouraged about the future.
   2 I feel I have nothing to look forward to.
   3 I feel that the future is hopeless and that things cannot improve.

3. 0 I do not feel like a failure.
   1 I feel I have failed more than the average person.
   2 As I look back on my life, all I can see is a lot of failures.
   3 I feel I am a complete failure as a person.

4. 0 I get as much satisfaction out of things as I used to.
   1 I don't enjoy things the way I used to.
   2 I don't get real satisfaction out of anything anymore.
   3 I am dissatisfied or bored with everything.

5. 0 I don't feel particularly guilty.
   1 I feel guilty a good part of the time.
   2 I feel quite guilty most of the time.
   3 I feel guilty all of the time.

6. 0 I don't feel I am being punished.
   1 I feel I may be punished.
   2 I expect to be punished.
   3 I feel I am being punished.

7. 0 I don't feel disappointed in myself.
   1 I am disappointed in myself.
   2 I am disgusted with myself.
   3 I hate myself.

8. 0 I don't feel I am any worse than anybody else.
1 I am critical of myself for my weaknesses or mistakes.
2 I blame myself all the time for my faults.
3 I blame myself for everything bad that happens.

9. 0 I don't cry anymore than usual.
1 I cry more now than I used to.
2 I cry all the time now.
3 I used to be able to cry, but now I can't even though I want to.

10. 0 I am no more irritated now than I ever am.
1 I get annoyed or irritated more easily than I used to.
2 I feel irritated all the time now.
3 I don't get irritated at all by the things that used to irritate me.

11. 0 I have not lost interest in other people.
1 I am less interested in other people than I used to be.
2 I have lost most of my interest in other people.
3 I have lost all of my interest in other people.

12. 0 I make decisions about as well as I ever could.
1 I put off making decisions more than I used to.
2 I have greater difficulty in making decisions than before.
3 I can't make decisions at all anymore.

13. 0 I don't feel I look any worse than I used to.
1 I am worried that I am looking old or unattractive.
2 I feel that there are permanent changes in my appearance that make me look unattractive.
3 I believe that I look ugly.

14. 0 I can work about as well as usual.
1 It takes an extra effort to get started at doing something.
2 I have to push myself very hard to do anything.
3 I can't do any work at all.

15. 0 I can sleep as well as usual.
1 I don't sleep as well as I used to.
2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
3 I wake up several hours earlier than I used to and cannot get back to sleep.

16. 0 I don't get more tired than usual.
1 I get tired more easily than I used to.
2 I get tired from doing almost anything.
3 I am too tired to do anything.

17. 0 My appetite is no worse than usual.
1 My appetite is not as good as it used to be.
2 My appetite is much worse now.
3 I have no appetite at all anymore.

18. 0 I haven't lost much weight, if any, lately.
1 I have lost more than 5 pounds.
2 I have lost more than 10 pounds.
3 I have lost more than 15 pounds.

If purposely trying to lose weight by eating less, check here ___.

19. 0 I am no more worried about my health than usual.
1 I am worried about physical problems such as aches and pains; or upset stomach; or constipation.
2 I am very worried about physical problems and it's hard to think of much else.
3 I am so worried about my physical problems, that I cannot think about anything else.

20. 0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

Appendix J

Trait Anxiety Inventory

DIRECTIONS: A number of statements that people have used to describe themselves are given below. Read each statement, and then circle the appropriate response to the right that indicates how you *generally* feel.

There are no right or wrong answers. Do not spend too much time on any one statement, but give the answer that seems to describe how you generally feel.

	Almost Never	**Sometimes**	**Often**	**Almost Always**
1. I feel pleasant.	1	2	3	4
2. I tire quickly.	1	2	3	4
3. I feel like crying.	1	2	3	4
4. I wish I could be as happy as others seem to be.	1	2	3	4
5. I am losing out on things because I can't make up my mind soon enough.	1	2	3	4
6. I feel rested.	1	2	3	4
7. I am "calm, cool, and collected."	1	2	3	4
8. I feel that difficulties are piling up so that I cannot overcome them.	1	2	3	4
9. I worry too much over something that really doesn't matter.	1	2	3	4
10. I am happy.	1	2	3	4
11. I am inclined to take things hard.	1	2	3	4
12. I lack self-confidence.	1	2	3	4
13. I feel secure.	1	2	3	4
14. I try to avoid facing a crisis or difficulty.	1	2	3	4
15. I feel blue.	1	2	3	4
16. I am content.	1	2	3	4
17. Some unimportant thought runs through my mind and bothers me.	1	2	3	4
18. I take disappointments so keenly that I can't put them out of my mind.	1	2	3	4
19. I am a steady person.	1	2	3	4
20. I get in a state of tension or turmoil as I think over my recent concerns and interests.	1	2	3	4

Appendix K

Positive and Negative Affect Schedule

This scale consists of a number of different words that describe different feelings and emotions. Read each item and then circle the appropriate number next to the word. Indicate to what extent you feel this way at the present moment.

	very slightly/ not at all	a little	moderately	quite a bit	extremely
interested	1	2	3	4	5
distressed	1	2	3	4	5
excited	1	2	3	4	5
upset	1	2	3	4	5
strong	1	2	3	4	5
guilty	1	2	3	4	5
scared	1	2	3	4	5
hostile	1	2	3	4	5
enthusiastic	1	2	3	4	5
proud	1	2	3	4	5
irritable	1	2	3	4	5
alert	1	2	3	4	5
ashamed	1	2	3	4	5
inspired	1	2	3	4	5
nervous	1	2	3	4	5
determined	1	2	3	4	5
attentive	1	2	3	4	5
jittery	1	2	3	4	5
active	1	2	3	4	5
afraid	1	2	3	4	5

Appendix L

Kentucky Inventory of Mindfulness Skills – Accept Without Judgment Scale

Please read the following items and circle the number that best reflects how true each statement is for you.

	Never or very rarely true	Seldom true	Sometimes true	Often true	Almost always or always true
1. I criticize myself for having irrational or inappropriate emotions.	1	2	3	4	5
2. I tend to evaluate whether my perceptions are right or wrong.	1	2	3	4	5
3. I tell myself that I shouldn't be feeling the way I'm feeling.	1	2	3	4	5
4. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.	1	2	3	4	5
5. I make judgments about whether my thoughts are good or bad.	1	2	3	4	5
6. I tend to make judgments about how worthwhile or worthless my experiences are.	1	2	3	4	5
7. I tell myself that I shouldn't be thinking the way I'm thinking.	1	2	3	4	5
8. I think some of my emotions are bad or inappropriate and I shouldn't be feeling them.	1	2	3	4	5
9. I disapprove of myself when I have irrational ideas.	1	2	3	4	5

Appendix M

Emotional Schema Scale

We are interested in how you deal with your feelings or emotions – for example, how you deal with feelings of anger, sadness, anxiety, or sexual feelings. We all differ in how we deal with these feelings, so there are no right or wrong answers. Please read each sentence carefully and answer each sentence, using the scale below, as to how you deal with your feelings during the past month. Put the number of your response next to the sentence.

Scale: 1 = very untrue of me
2 = somewhat untrue of me
3 = slightly untrue of me
4 = slightly true of me
5 = somewhat true of me
6 = very true of me

1. ___ Some feelings are wrong to have.
2. ___ When I feel down, I sit by myself and think a lot about how bad I feel.
3. ___ I worry that if I have certain feelings I might go crazy.
4. ___ You can't allow yourself to have certain kinds of feelings – like feelings about sex or violence.
5. ___ I think that there are feelings that I have that I am not really aware of.
6. ___ My feelings seem to come out of nowhere.
7. ___ When I have a feeling that bothers me I try to think of something else to think about or do.
8. ___ If I let myself have some of these feelings, I fear that I will lose control.
9. ___ There are things about myself that I just don't understand.
10. ___ I often say to myself, "What's wrong with me?"
11. ___ I feel ashamed about my feelings.
12. ___ I want people to believe that I am different from the way I truly feel.
13. ___ I focus a lot on my feelings or my physical sensations.
14. ___ I feel that I can express my feelings openly.
15. ___ My feelings don't make sense to me.

Scale: 1 = very untrue of me
2 = somewhat untrue of me
3 = slightly untrue of me
4 = slightly true of me
5 = somewhat true of me
6 = very true of me

16. ___ I try to get rid of an unpleasant feeling immediately.
17. ___ You have to guard against having certain feelings.

18. ___ When I feel down, I try to think about a different way to view things.
19. ___ I worry that I won't be able to control my feelings.
20. ___ I think that my feelings are strange or weird.
21. ___ I accept my feelings.
22. ___ I believe that it is important to let myself cry in order to get my feelings "out."
23. ___ I don't want to admit to having certain feelings – but I know that I have them.
24. ___ I shouldn't have some of the feelings that I have.
25. ___ When I have a feeling that bothers me, I try to think of why it is not important.

Appendix N

Rosenberg Self-Esteem Scale

For the following statements, please circle the number which indicates how much you agree or disagree with the statement.

1. I feel that I am a person of worth, at least on an equal basis with others.

1 2 3 4
.....Strongly Agree.....Agree.....Disagree.....Strongly Disagree...

2. I feel that I have a number of good qualities.

1 2 3 4
.....Strongly Agree.....Agree.....Disagree.....Strongly Disagree...

3. All in all, I am inclined to feel that I am a failure

1 2 3 4
.....Strongly Agree.....Agree.....Disagree.....Strongly Disagree...

4. I am able to do things as well almost other people.

1 2 3 4
.....Strongly Agree.....Agree.....Disagree.....Strongly Disagree...

5. I feel I do not have much to be proud of.

1 2 3 4
.....Strongly Agree.....Agree.....Disagree.....Strongly Disagree...

6. I take a positive attitude toward myself.

1 2 3 4
.....Strongly Agree.....Agree.....Disagree.....Strongly Disagree...

7. On the whole, I am satisfied with myself.

1 2 3 4
.....Strongly Agree.....Agree.....Disagree.....Strongly Disagree...

8. I wish I could have more respect for myself.

1 2 3 4
.....Strongly Agree.....Agree.....Disagree.....Strongly Disagree...

9. I certainly feel useless at times.

1 2 3 4
.....Strongly Agree.....Agree.....Disagree.....Strongly Disagree...

10. At times I think I am no good at all.

1 2 3 4
.....Strongly Agree.....Agree.....Disagree.....Strongly Disagree...

Appendix O

Trait Meta-Mood Scale (TMMS) – Clarity Factor

We are interested in finding out what people feel and think about their emotions in general. Please read each statement and decide whether or not you agree with it. Circle the number that best describes you for each item below.

Strongly Disagree				Strongly Agree	
1	2	3	4	5	I am usually confused about how I feel.
1	2	3	4	5	I am often aware of my feelings.
1	2	3	4	5	I can never tell how I feel.
1	2	3	4	5	My beliefs and opinions always seem to change depending on how I feel.
1	2	3	4	5	Sometimes I can't tell what my feelings are.
1	2	3	4	5	I almost always know exactly how I feel.
1	2	3	4	5	I feel at ease about my emotions.
1	2	3	4	5	I am usually very clear about my feelings.
1	2	3	4	5	I usually know my feelings about a matter
1	2	3	4	5	I am rarely confused about how I feel.
1	2	3	4	5	I can’t make sense out of my feelings.

Appendix P

Probe Questions

What did you think was going on in the study?

_____
_____
_____

At any point did you doubt or question any aspect of the study?

_____
_____
_____

At the time that you got the feedback regarding your performance on the problem solving task, did you think that feedback was valid?

_____
_____
_____

Have you ever been in any study that asked you to write, similar to this one? If so, what were you asked to write about?

_____
_____
_____

Did anyone tell you anything about this study before you participated today? If so, what did they tell you?

_____
_____
_____

Appendix Q

Flow-chart of Study Procedures

Phase One
Complete online battery of questionnaires

Phase Two
Upon arrival to study session, complete consent form and BDI
↓
Complete PANAS (self-report measure of mood)
↓
Hook-up to physiological monitor
↓
8 minute sit (allow for stabilization of physiological measurements and gather baseline physiological data)
↓
RAT and negative feedback (negative mood induction)
↓
Powerpoint presentation
↓
Complete PANAS
↓
Writing phase – eight minutes (allow for emotional processing)
↓
Sitting phase – three minutes (allow for emotional processing)
↓
Complete PANAS
↓
Writing phase – ten minutes (allow for emotional processing)
↓
Sitting phase – three minutes (allow for emotional processing)
↓
Complete PANAS
↓
Word response task (measure of rumination about negative mood induction)
↓
Unhook-up from physiological monitor and ask probed questions
↓
Debrief and complete post-debriefing consent form

Appendix R

Means and Standard Deviations of Questionnaires

Assessing Ideas Related to Emotional Evaluation

Variable	Mean	Standard Deviation	Minimum Score	Maximum Score
REQ-unpleasant emotions subscale	31.62	6.53	14	48
REQ-pleasant emotions subscale	25.71	3.17	16	30
TMMS-clarity factor	39.38	7.67	20	55
RSQ-secure	16.06	3.09	7	23
RSQ-fearful	10.97	3.49	4	20
RSQ-preoccupied	11.59	2.76	5	20
RSQ-dismissing	15.91	2.85	9	24
Rosenberg Self-Esteem Scale	18.25	5.73	10	37
KIMS-accept without judgment subscale	24.74	7.39	9	45
LESS-expression subscale	8.17	2.35	2	12
LESS-guilt subscale	11.10	4.63	4	24
LESS-rumination subscale	17.27	4.25	7	30
LESS-control subscale	13.06	3.79	3	18
LESS-acceptance of feelings subscale	27.83	5.86	8	42
LESS-comprehensibility subscale	16.69	4.46	4	24
STAI-Trait version	41.21	9.88	23	73
ERQ-suppression subscale	13.44	4.65	4	28
ERQ-reappraisal subscale	27.34	6.62	6	42
Ruminative Responses Scale	51.37	10.29	28	75

Appendix S

Correlation Table of the Unpleasant Emotion Scale, the Pleasant Emotion Scale, and Related Questionnaires

	UES	PES
Kentucky Inventory of Mindfulness Skills		
accept without judgment subscale	-.38**	.04
Rosenberg Self-Esteem Scale	.33**	.25**
Trait Meta-Mood Scale		
clarity factor	.37**	.23**
Leahy Emotional Schema Scale		
expression subscale	.15*	.09
guilt subscale	-.39**	-.07
rumination subscale	-.35**	-.04
control subscale	.34**	.14
acceptance subscale	.20**	.05
comprehensibility subscale	.39**	.13
State-Trait Anxiety Inventory (trait version)	-.45**	-.16*
Emotion Regulation Questionnaire		
suppression subscale	-.13	-.17*
reappraisal subscale	.08	.17*
Ruminative Responses Scale †	-.46**	-.08

note: ** significance at the .01 level; * significance at the .05 level (2-tailed); † N=34

Appendix T

Descriptive Data for Medians of Heart Rate (HR), Skin Conductance (SC),

and Skin Temperature (ST) at Session Phases

	Mean	Standard Deviation	Minimum	Maximum
Baseline				
HR	116.69	6.53	103.00	132.12
SC	4.74	2.66	1.31	15.95
ST	77.16	3.83	72.78	90.92
RAT feedback				
HR	117.61	16.36	88.33	156.29
SC	6.50	3.25	1.29	21.50
ST	77.85	3.81	73.52	91.12
Writing 1				
HR	116.02	6.41	96.93	129.03
SC	6.23	3.33	1.35	20.93
ST	77.76	3.53	73.72	90.99
Sitting 1				
HR	116.02	11.75	92.68	153.57
SC	6.17	3.34	1.48	20.99
ST	77.54	3.35	73.63	89.80
Writing 2				
HR	117.51	6.04	105.73	130.83
SC	6.00	3.30	1.66	21.08
ST	77.75	3.94	73.70	97.20
Sitting 2				
HR	118.26	11.63	89.82	143.62
SC	6.04	3.32	1.80	20.71
ST	77.84	3.94	73.93	92.17

Note: HR was measured in beats per minute; SC was measured in uMhos; ST was measured in ◦F

Appendix U

Intercorrelation Matrix between Median Heart Rate (HR), Median Skin Conductance (SC),

and Median Skin Temperature (ST) at Six Study Phases

	Baseline			RAT feedback			Writing 1			Sitting 1			Writing 2			Sitting 2		
	HR	SC	ST	HR	SC	ST	HR	SC	ST	HR	SC	ST	HR	SC	ST	HR	SC	ST
Baseline HR	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Baseline SC	.33**	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Baseline ST	-.13	.05	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RAT feedback HR	.09	-.16	-.01	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RAT feedback SC	.29*	.89**	.04	-.21	1	-	-	-	-	-	-	-	-	-	-	-	-	-
RAT feedback ST	-.23	.01	.85**	.16	-.01	1	-	-	-	-	-	-	-	-	-	-	-	-
Writing 1 HR	-.12	.11	-.00	.02	.10	-.00	1	-	-	-	-	-	-	-	-	-	-	-
Writing 1 SC	.30*	.88**	.04	-.21	.99**	-.02	.13	1	-	-	-	-	-	-	-	-	-	-
Writing 1 ST	-.22	.06	.57**	.18	.04	.70**	.12	.03	1	-	-	-	-	-	-	-	-	-
Sitting 1HR	.00	.20	-.25*	-.19	.13	-.16	-.12	.12	-.13	1	-	-	-	-	-	-	-	-
Sitting 1 SC	.30*	.88**	.04	-.21	.99**	-.02	.12	1.0**	.02	.13	1	-	-	-	-	-	-	-
Sitting 1 ST	-.14	.00	.54**	.18	-.01	.59**	.08	-.01	.92**	-.11	-.02	1	-	-	-	-	-	-
Writing 2 HR	.01	-.19	.03	-.21	-.17	.05	.08	-.16	.01	-.07	-.17	.05	1	-	-	-	-	-
Writing 2 SC	.31**	.88**	.04	-.18	.99**	-.03	.12	.99**	-.00	.11	.99**	-.04	-.17	1	-	-	-	-
Writing 2 ST	-.16	-.02	.46**	.01	-.03	.47**	.11	-.03	.81**	-.05	-.03	.90**	.03	-.06	1	-	-	-
Sitting 2 HR	-.04	-.08	.11	.14*	-.06	.15	-.17	-.05	.11	.18	-.04	.14	-.30*	-.04	.17	1	-	-
Sitting 2 SC	.31**	.88**	.03	-.19	.98**	-.04	.12	.99**	.00	.12	.99**	-.04	-.18	1.0**	-.05	-.03	1	-
Sitting 2 ST	-.19	-.06	.45**	.14	-.03	.61**	.08	-.02	.80**	-.04	-.03	.85**	-.01	-.05	.88**	.27*	-.04	1

Note: ** significance at .01 level (2-tailed); * significance at .05 level (2-tailed)

Appendix V

Reliability Analysis for PANAS subscales

Scale	Coefficient alpha
PA 1	.90
NA 1	.87
PA 2	.88
NA 2	.89
PA 3	.90
NA 3	.87
PA 4	.90
NA 4	.84

Appendix W

Descriptive Data for PANAS Subscales

	Mean	Standard Deviation	Minimum	Maximum
PA 1	23.67	7.87	11.00	43.00
NA 1	13.50	5.00	10.00	38.00
PA 2	20.41	6.56	10.00	39.00
NA 2	15.04	5.69	10.00	33.00
PA 3	18.23	6.51	10.00	39.00
NA 3	13.62	4.78	10.00	34.00
PA 4	17.20	6.51	10.00	36.00
NA 4	14.06	4.98	10.00	35.00

Appendix X

Intercorrelation Matrix between the Positive Affect Scales and the Negative Affect Scales from PANAS's 1-4

	PA 1	NA 1	PA 2	NA 2	PA 3	NA 3	PA 4	NA 4
PA 1	1	-	-	-	-	-	-	-
NA 1	.13	1	-	-	-	-	-	-
PA 2	.83**	.09	1	-	-	-	-	-
NA 2	.20	.77**	.17	1	-	-	-	-
PA 3	.79**	.29*	.90**	.31*	1	-	-	-
NA 3	.14	.84**	.13	.76**	.26*	1	-	-
PA 4	.71**	.34**	.81**	.30*	.93**	.29*	1	-
NA 4	.21	.81**	.15	.74**	.26*	.90**	.26*	1

Note: ** significance at the .01 level; * significance at the .05 level

Appendix Y

Correlation Matrix between Median Heart Rate (HR), Median Skin Conductance (SC), and Median Skin Temperature (ST) with PANAS Subscales

	PANAS 1		PANAS 2		PANAS 3		PANAS 4	
	PA	NA	PA	NA	PA	NA	PA	NA
Baseline								
HR	-.11	-.04	-.10	.07	-.17	-.00	-.17	.14
SC	.01	.10	.05	.04	-.02	.17	.00	.13
ST	.01	-.08	.05	.04	-.06	-.09	.02	-.10
RAT feedback								
HR	.09	-.14	.13	-.24*	.11	-.14	.14	-.11
SC	.03	.07	.08	.04	.01	.15	.02	.11
ST	.05	-.14	-.01	-.18	-.08	-.18	.00	-.18
Writing 1								
HR	.28*	.07	.18	-.05	.30*	.18	.25*	.15
SC	.06	.08	.09	.07	.01	.17	.02	.13
ST	.09	-.09	.02	-.14	-.02	-.14	.06	-.18
Sitting 1								
HR	-.04	.03	-.18	.02	-.15	-.07	-.13	-.06
SC	.07	.08	.10	.07	.02	.16	.02	.12
ST	.02	-.06	-.04	-.10	-.05	-.14	.08	-.21
Writing 2								
HR	-.05	-.02	-.12	.03	-.22	.00	-.16	.00
SC	.06	.06	.10	.05	.02	.17	.02	.13
ST	-.00	-.06	-.12	-.06	-.13	-.12	-.04	-.18
Sitting 2								
HR	-.07	.03	-.04	.09	.09	-.00	.03	.00
SC	.06	.07	.09	.06	.01	.17	.03	.00
ST	-.05	-.11	-.17	-.15	-.17	-.19	-.11	-.25*

Note: * significance at the .05 level (2-tailed)

Appendix Z

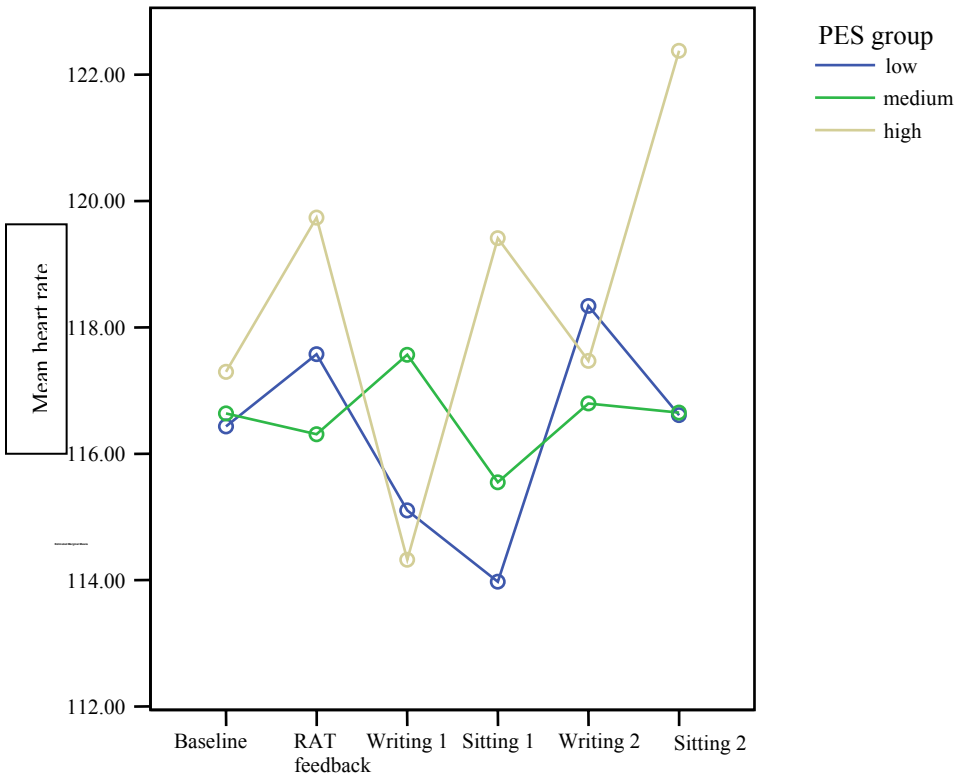
Correlations between the UES and PES with Physiological Variables and PANAS Subscales

	UES	PES
Baseline		
HR	-.01	.01
SC	.05	.09
ST	.03	-.04
RAT feedback		
HR	.02	.04
SC	.11	.11
ST	-.02	.03
Writing 1		
HR	.11	-.06
SC	.10	.11
ST	-.10	.11
Sitting 1		
HR	-.04	.20
SC	.11	.11
ST	-.16	.11
Writing 2		
HR	-.10	-.13
SC	.09	.10
ST	-.17	.03
Sitting 2		
HR	-.10	.22
SC	.09	.10
ST	-.11	.07
PA 1	.12	.08
NA 1	-.14	.13
PA 2	.09	.00
NA 2	-.27*	.14
PA 3	.11	.01
NA 3	-.14	.14
PA 4	.08	-.01
NA 4	-.17	.17

Note: * significance at .05 level (2-tailed)

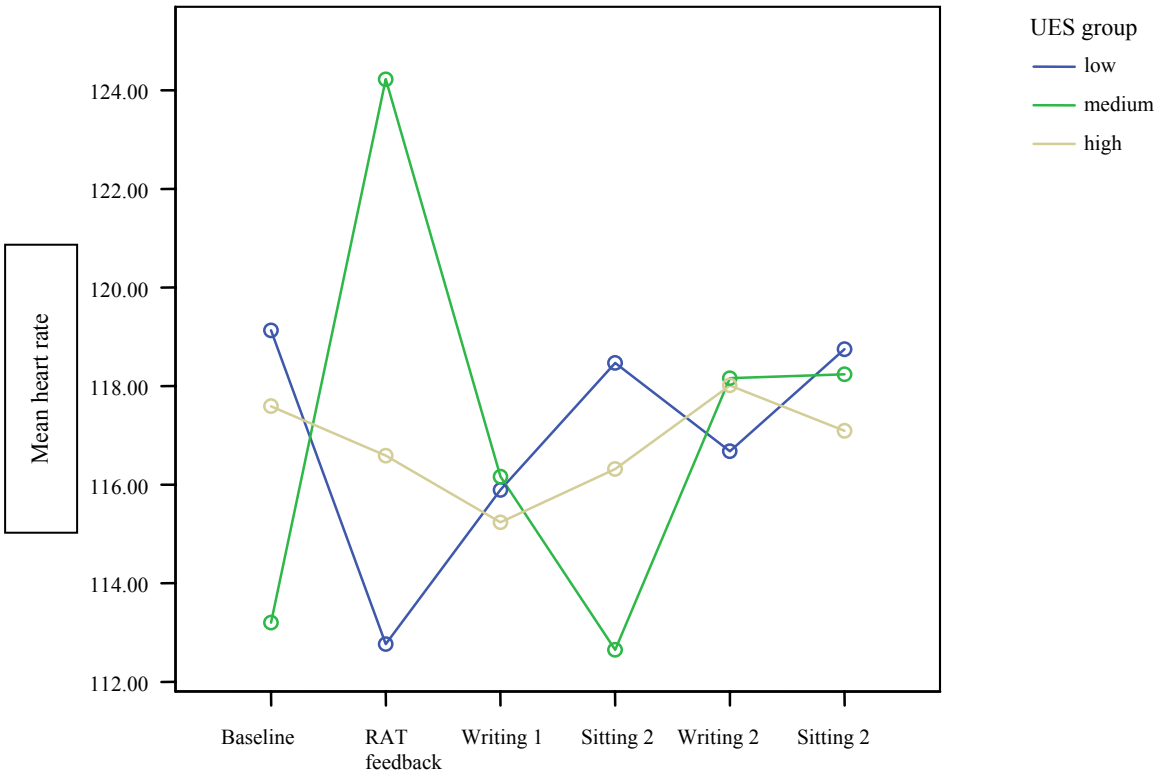
Appendix AA

Mean Heart Rate Across Session Phases for PES Groups



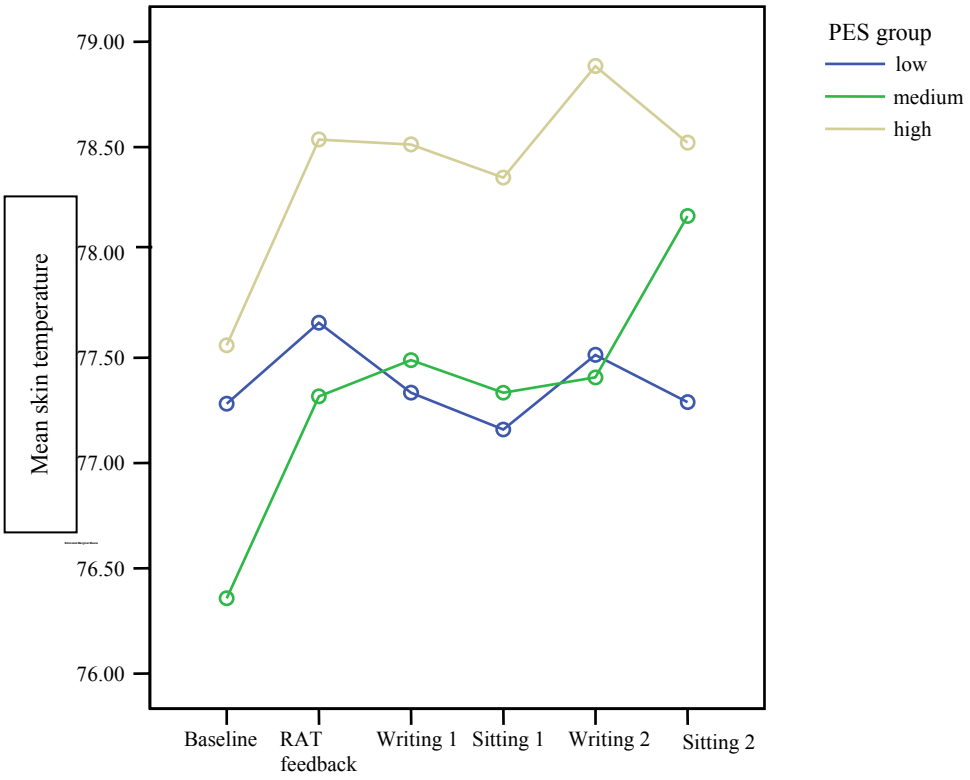
Appendix BB

Mean Heart Rate Across Session Phases for UES Groups



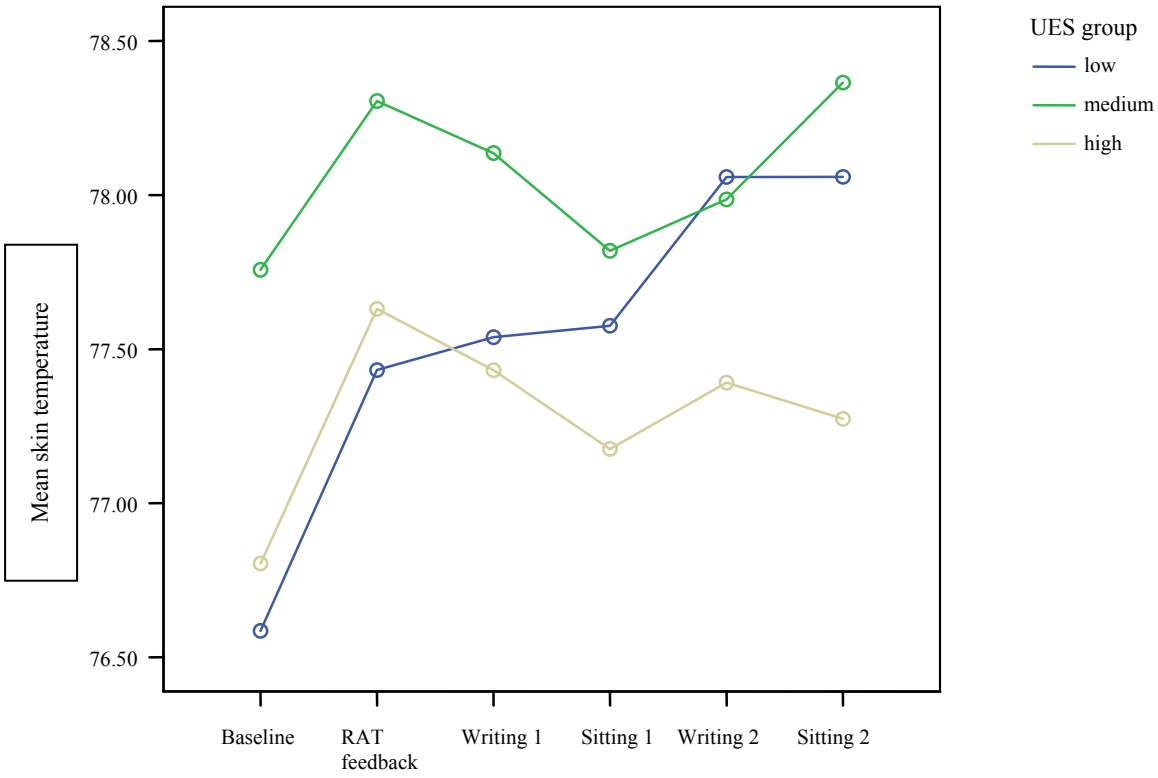
Appendix CC

Mean Skin Temperature Across Session Phases for PES Groups



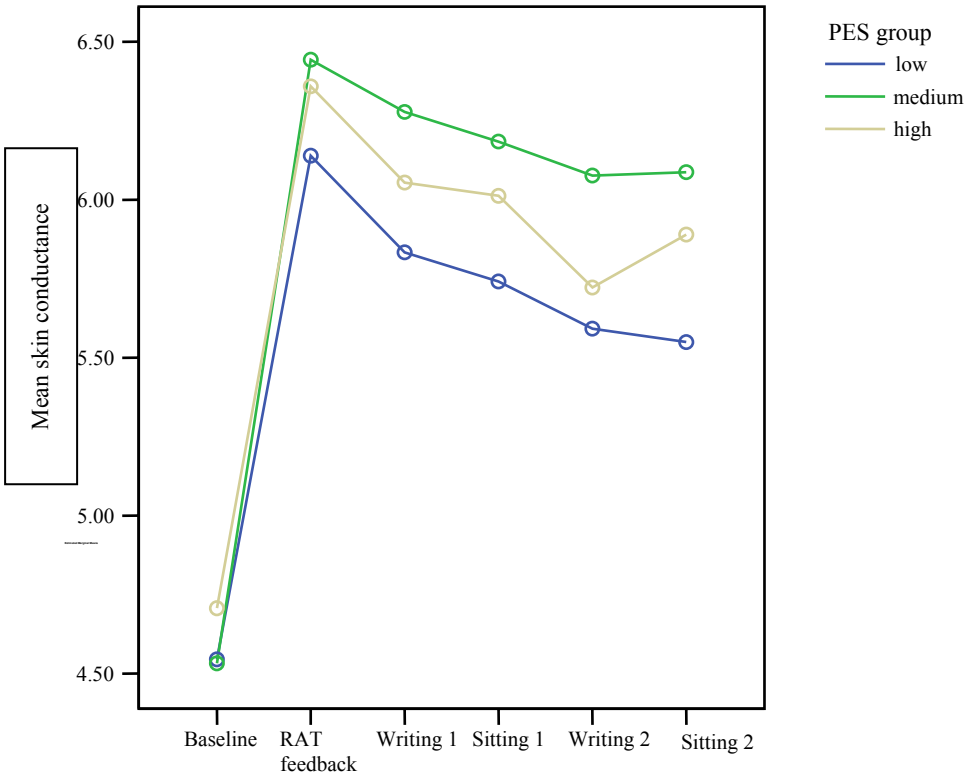
Appendix DD

Mean Skin Temperature Across Session Phases for UES Groups



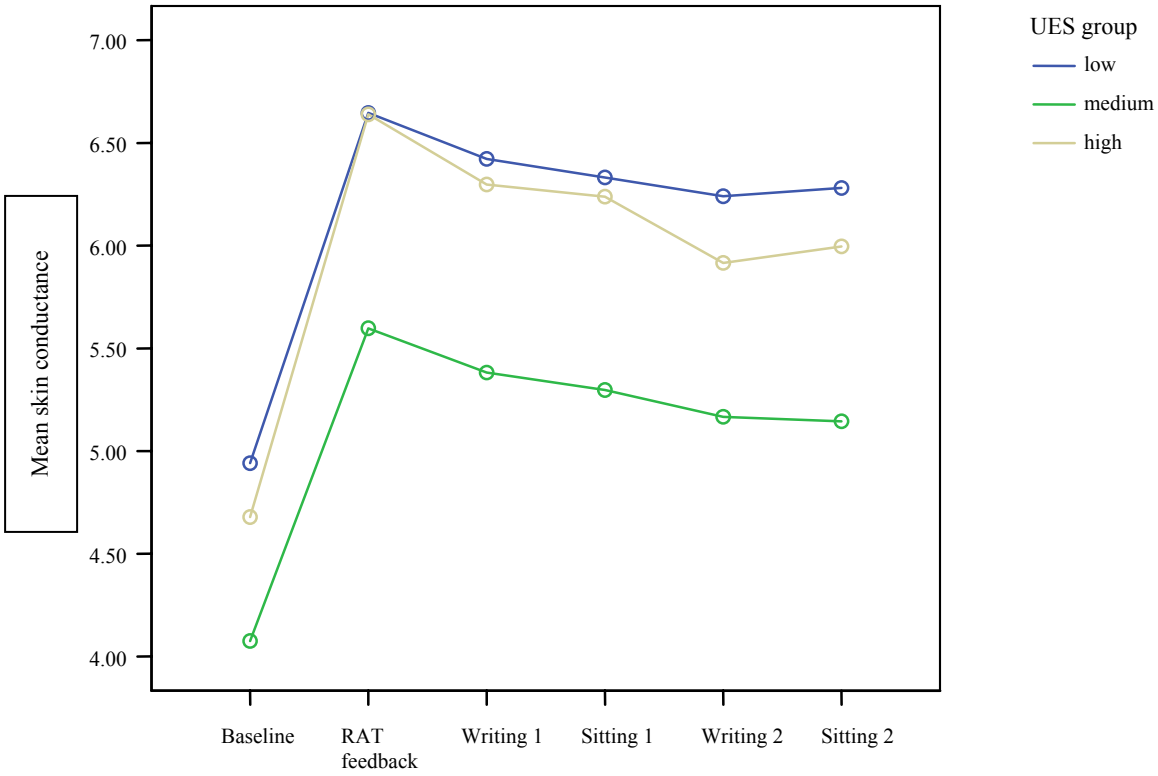
Appendix EE

Mean Skin Conductance Across Study Sessions for PES Groups



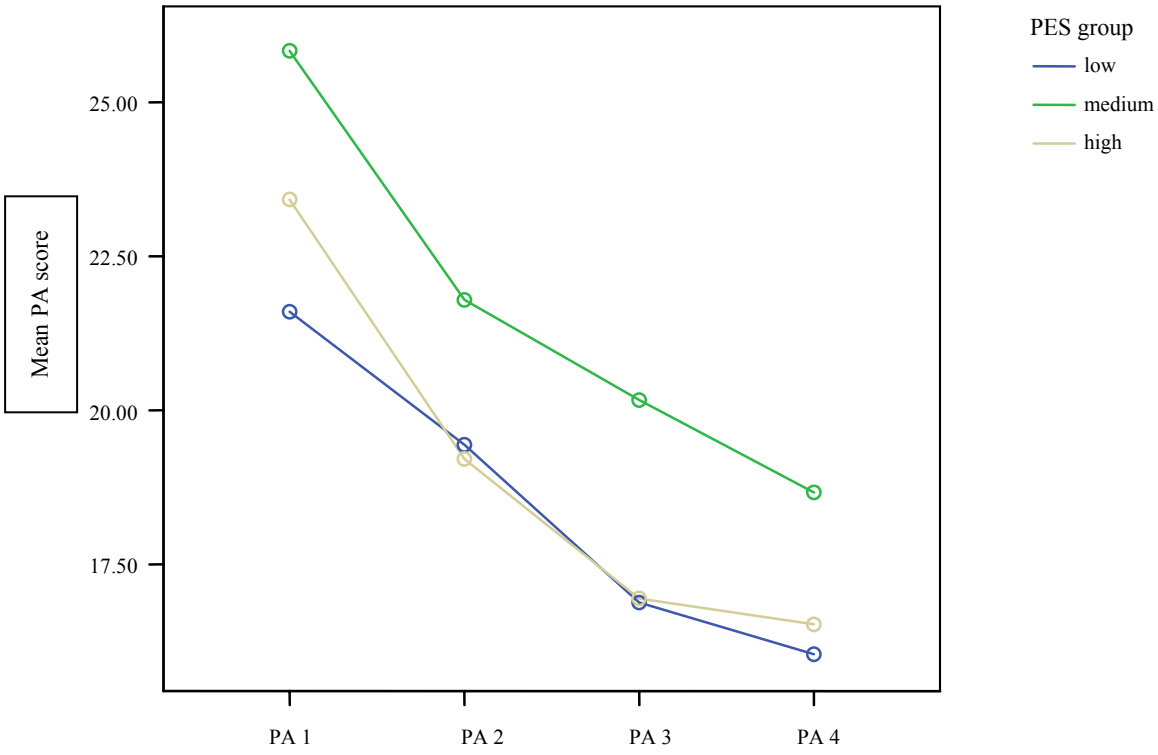
Appendix FF

Mean Skin Conductance Across Session Phases for UES Groups



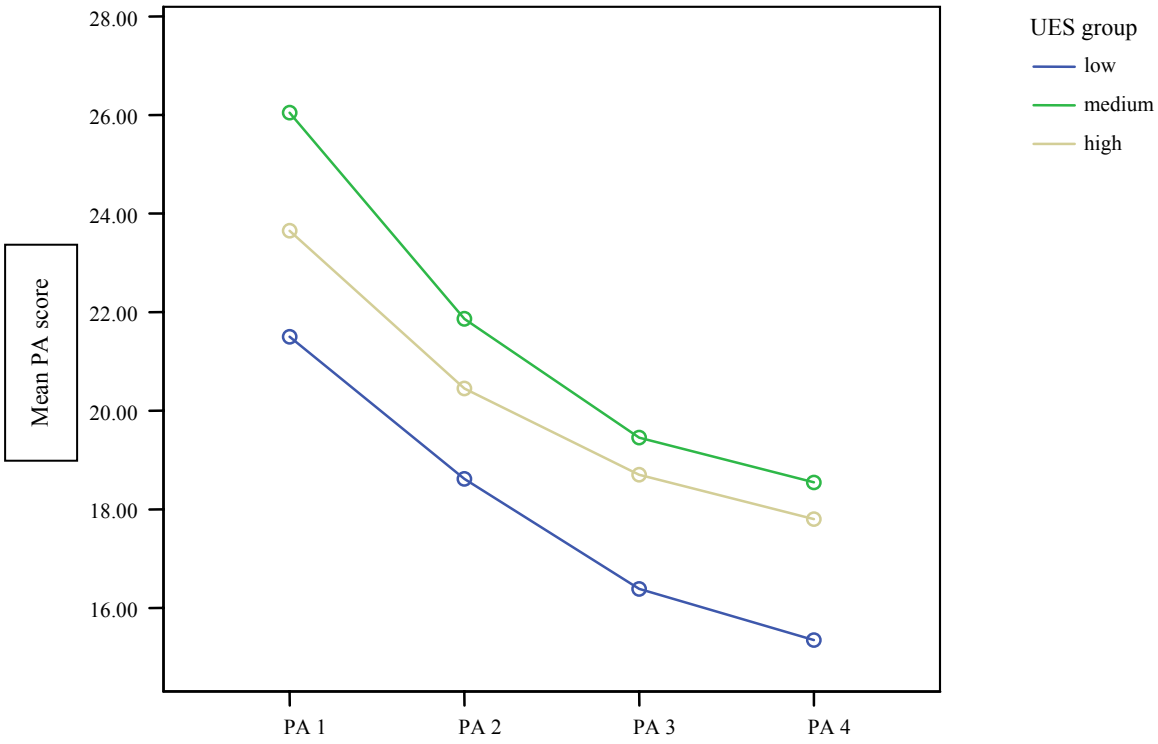
Appendix GG

Positive Affect (PA) Scores Across Four Administrations of the PANAS for PES Groups



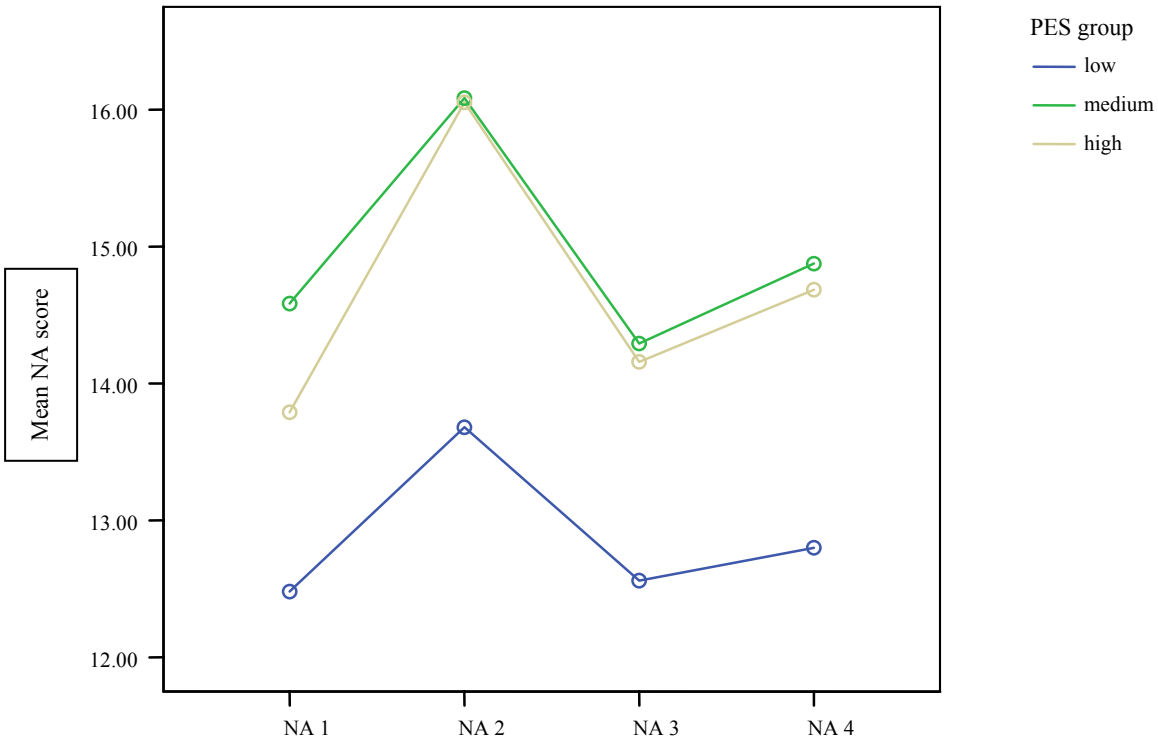
Appendix HH

Mean Positive Affect (PA) Scores Across Four PANAS Administrations for UES Groups



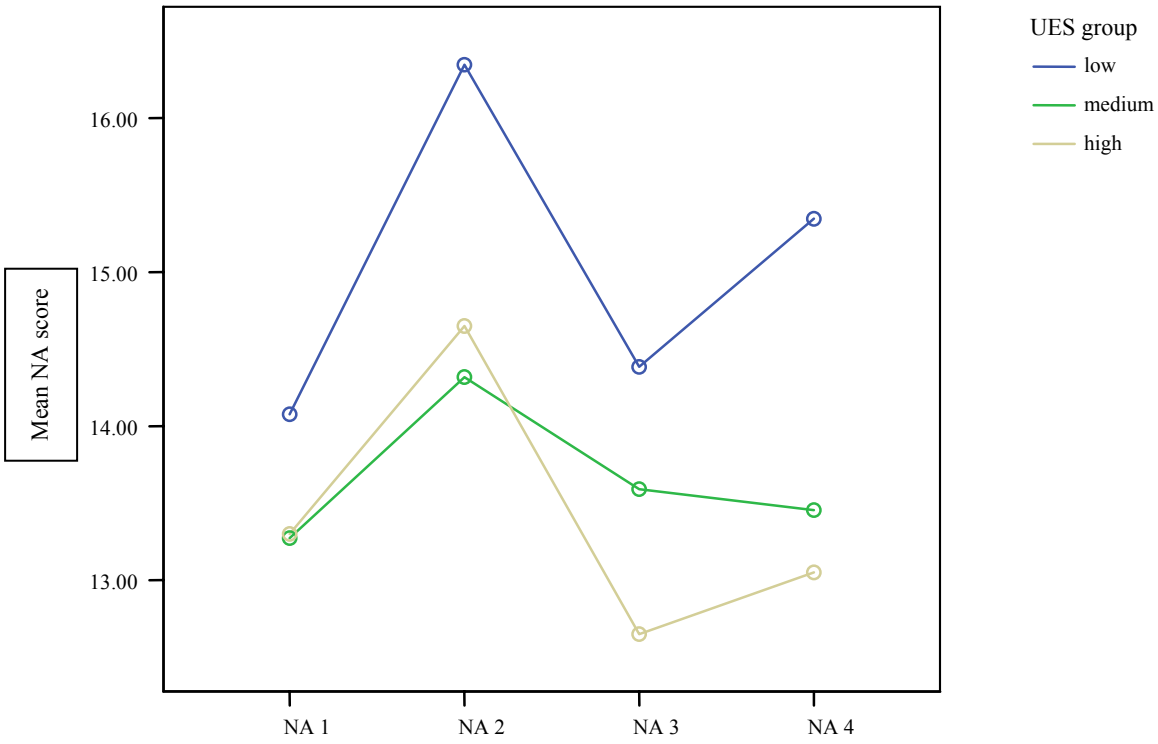
Appendix II

Mean Negative Affect (NA) Scores Across Four PANAS Administrations for PES Groups



Appendix JJ

Mean Negative Affect (NA) Scores Across Four PANAS Administrations for UES Groups



Appendix KK

* indicates a RAT-related stimulus word
** indicates an incorrect response included as RAT-related

Association*
Occasion
Associate**
Creature

Automobile
Assemble
Tangle
Amicable
Attempt
Amiable

Regulate
Ructile
Ringlet
Roulette
Regret
Regalite
Regular
Relegate

Disappoint*
Disappointment**
Disposition
Disappointed**
Diaspora
Disappropriate
Dilapatory
Deploy
Diplomat

Agreeable
Agree
Aggravate**

Frustrated*
Frustrate**

Incapable*
Inaptable
Inappropriate
Inoperable
Inapplicable
Enable
Inaffable
Inedible
Inaudible
Inability**

Unsatisfied*
Justified
Unfrustrated**
Unstuffed

Sterile
Senile
Sensible
Serenity

Upset*
Uptight

Digital
Denial
Dialect
Distal
Difficult**
Dismal

Ability*
Arbitrary

Sweet
Sweat

Healing
Help
Helen
Helmet
Helpful

Word*
Weird
Wired
Weed
Ward

Bright
Blight
Inhibit
Bitch

Clean
Cent
Calm
Cream
Crind
Seven

Worse*
Wool
Worry**
Wolf
Were
World
Whoa
Word**
Woes
Wrote
Worst**
Work
Whole

Radio
Ready
Redial
Rigid
Rodeo
Riddle
Radius

Weakness*
Weakless

Mistake*
State
Musket

Defeat*
Define
Defrost
Defy
Default
Defense
Decaf
Different
Deflate
Difficult**
Defile

Coffee
Careful
Café
Caffeine

Negative*
Nighttime

Poor*
Prior

Television
Athleticism
Tension**

Independent
Identify
Ingredient
Identical
Identity
Indecadent
Different
Indetermine
Identification
Incidence
Indifferent
Indefinite
Indentured
Identification
Indecent

Tasty
Tipsy
Testy**
Tasky
Toasty
Tissy
Tossy
Tizzy

Terrible*
Trouble

Musical
Mistrial
Miserable**
Mistletoe
Missile
Mystical
Mistake**
Mystery

Unsuccessful*
Successful

Confusing*
Confusion**
Confuse**
Confession
Confidence
Confined

Invisible
Invincible
Inevitable
Irreversible
Inversitile
Inirascible

Error*
Zero**
Hero
Erosion

Appendix LL

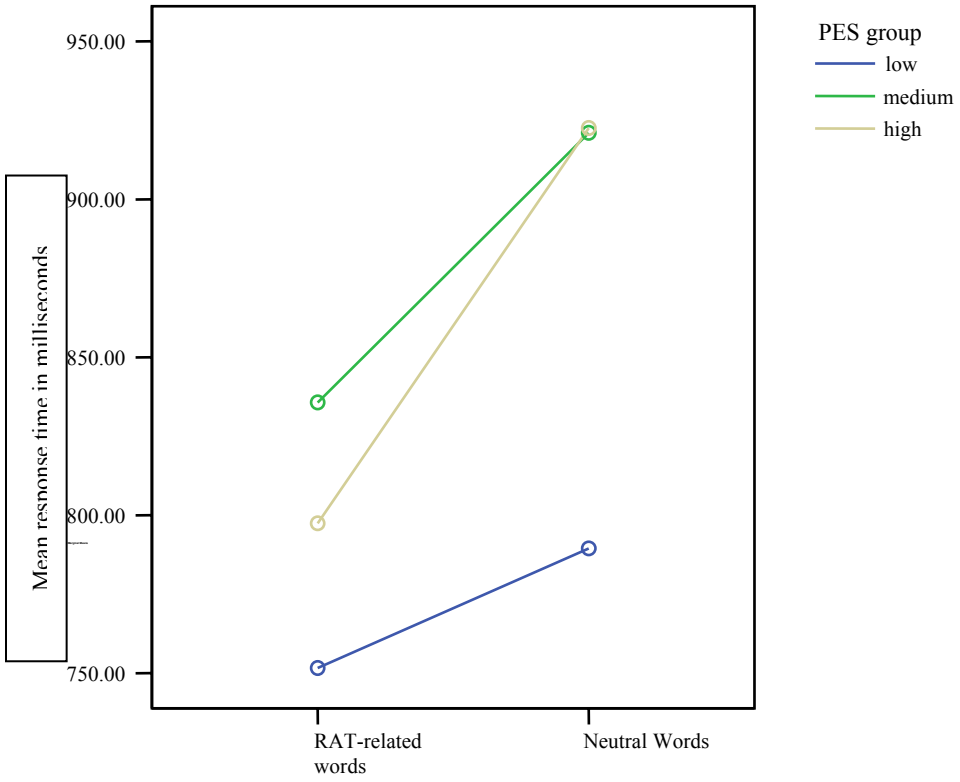
Descriptive Data for Response Time and Number Correct for RAT-Related and Control Words

	Mean	Standard Deviation	Minimum	Maximum
RAT-related Words				
median response time	792.92	201.14	470.05	1631.00
number correct	14.77	2.30	8.00	19.00
Control Words				
median response time	873.62	273.35	541	2081
number correct	9.54	2.53	4.00	16.00

Note: response time measured in milliseconds.

Appendix MM

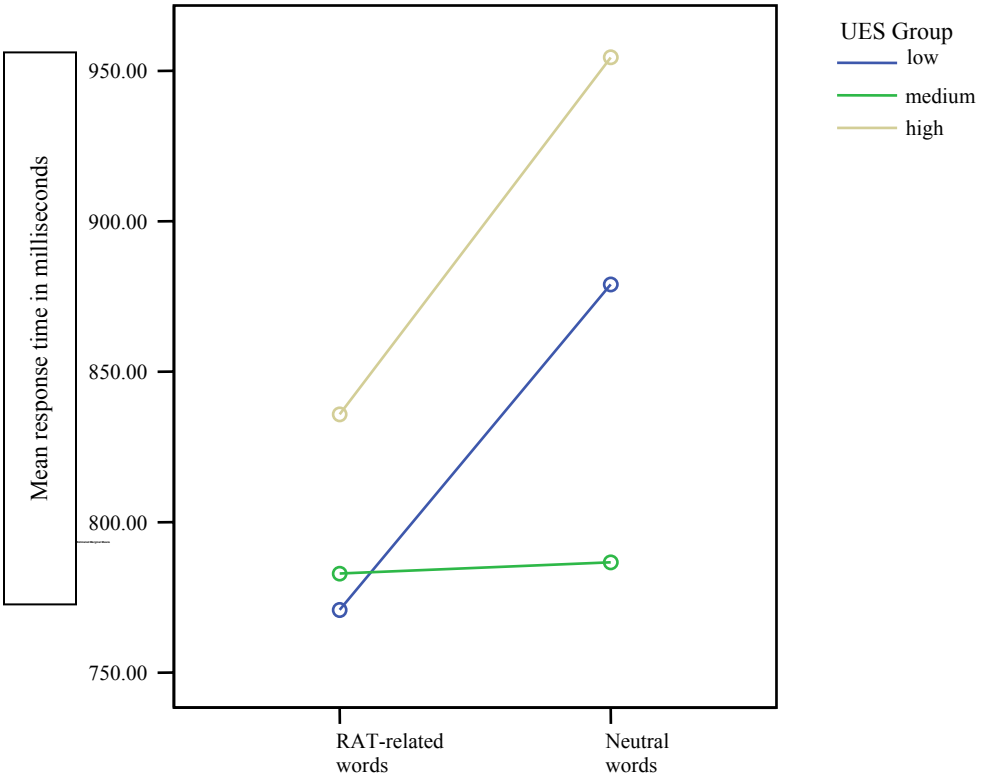
Mean Response Time to RAT-Related and Neutral Words for PES Groups



Appendix NN

Mean Response Time to RAT-Related and Neutral Words

for UES Groups



Appendix OO

Canonical Solution for Attachment Predicting Emotional Regulation for Function 1

	Function 1		
Variable	Coeff.	r_s	r_s^2
Emotional Evaluation			
Reactions to Emotions Questionnaire			
UES	-.64	**-.73**	53.1%
PES	.01	-.12	1.4%
Emotional Inhibition			
Emotion Regulation Questionnaire			
Suppression Subscale	.69	**.77**	59.6%
R_s^2			33.7%
Attachment			
Relationship Scales Questionnaire			
Secure	-.82	**-.96**	92.0%
Dismissing	.14	.39	15.5%
Preoccupied	-.07	.31	9.6%
Fearful	.25	**.74**	54.2%

Note:
Coeff. = standardized canonical function coefficients
r_s = structure coefficient
r_s^2 = squared structure coefficient or variance explained
Structure coefficients (r_s) greater than |.45| are in bold type

Appendix PP

Intercorrelation Matrix between Attachment Styles from the RSQ, PES and UES from the REQ, and Suppression Subscale from the ERQ

	Secure	Fearful	Preocc.	Dismiss.	UES	PES	Suppr.
Secure	1	-	-	-	-	-	-
Fearful	-.57**	1	-	-	-	-	-
Preoccupied	-.40**	-.37**	1	-	-	-	-
Dismissing	-.18**	.32**	-.25**	1	-	-	-
UES	.42**	-.35**	-.26**	-.04	1	-	-
PES	.06	-.00	.14	-.01	.01	1	-
Suppression	-.41**	.30**	.01	.30**	-.13	-.17*	1

note: ** significance at the .01 level (2-tailed); * significance at the .05 level (2-tailed)

Appendix QQ

Proposed Model Between Attachment Style, Emotional Evaluation, and

Emotional Inhibition with First-Order Correlations Included

		View of Other (reflected in emotional inhibition vs. expression)	
		Positive	Negative
Positive **View of Self** (reflected in emotional evaluation)		**SECURE** Do not inhibit emotions ***r*² = -.41**** Positive emotional evaluation ***r*² = .42**** **PREOCCUPIED** Do no inhibit emotions *r*² = .01	**DISMISSING** Do inhibit emotions ***r*² = .30**** Positive emotional evaluation *r*² = -.04 **FEARFUL** Do inhibit emotions ***r*² = .30**** Negative emotional evaluation ***r*² = -.35****
Negative		Negative emotional evaluation ***r*² = -.26****	

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VITA

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